S-7678-0

THE LANCET.

No. 4226. Vol. CLXVII. LONDON, SATURDAY, AUGUST 27, 1904. [Pp. 120+40.

CONTENTS.

A PRESIDENTIAL ADDRESS on Preventive Work in the Tropics. Delivered before the Tropical Section of the Congress of the Royal Institute of Public Health held at Folkestone, July, 1904, by W. J. R. SIMPSON, M. D. Aberd., F.R.C.P. Lond., Professor of Hygiene, King's College, London; and Lecturer on Tropical Hygiene at the London School of Tropical Medicine 577

CLINICAL LECTURE (Abstract of a) on the Diagnosis of Osteo-Sarcoma of the Long Bones. Delivered at St. Thomas's Hospital on June 16th, 1904, by WILLIAM H. BATTLE, F.R.C.S.Eng., Surgeon to St. Thomas's Hospital. — (*Illustrated*) 580

ORIGINAL ARTICLES.

Note on the Serum Treatment of Exophthalmic Goitre. By GEORGE R. MURRAY, M.A., M.D.Cantab., F.R.C.P.Lond., Heath Professor of Comparative Pathology in the University of Durham; Physician to the Royal Infirmary, Newcastle 583

The Radical Cure of Patent Urachus (Urachal Urinary Fistula). By B. CROSSFIELD STEVENS, M.D., M.S.Durh., F.R.C.S.Edin.—(*Illustrated*).. 584

Notes on a Series of Operations for the Accidents and Complications of Gastric Ulcer. By G. REINHARDT ANDERSON, F. R. C. S. Eng., Honorary Medical Officer to the Southport Infirmary 585

A Case of Acute Diabetes Insipidus with Fatal Coma. By ALFRED H. CARTER, M.D. Lond., F.R.C.P.Lond., Senior Physician to Queen's Hospital, Birmingham; Professor of Medicine, University of Birmingham 588

A Method of Hysterectomy. By JOHN O'CONOR, M.A., M.D. Dub., Senior Medical Officer, British Hospital, Buenos Ayres 589

Meningeal Infection by the Diplococcus Pneumoniæ, simulating Infective Cerebro-spinal Meningitis. By W. G. BARRAS, M.D.Glasg., L.S.Sc. Durh., D.P.H., Bacteriologist, Burgh of Govan 590

Hæmorrhagic Small-pox: A Clinical Note of 36 Cases. By CHARLES FRASER, M.A., M.D. Edin., Assistant Medical Superintendent, St. Pancras Infirmary (South); late Resident Medical Officer, Dagenham Small-pox Hospital 590

Formaldehyde in Milk. By W. SCOTT TEBB, M.A., M.D. Cantab., Public Analyst to the Metropolitan Borough of Southwark 592

Two Cases of Poisoning by Mussels—One Fatal. By R. ROLFE, M.B., B.C. Cantab., Medical Officer to the New Dock Hospital, Avonmouth ... 593

A New Pathogenic Bacterium Causing Basal Meningitis in Infants. By W. D'ESTE EMERY, M.D., B.Sc. Lond., Clinical Pathologist to King's College Hospital; Pathologist to the Children's Hospital, Paddington-green 593

South African Horse Sickness: a Novel Method of Treatment by Oxygen Inhalations. By H. KENNEDY SMYTH, M.B., B.Ch.R.U.I., District Surgeon, Gwelo, Rhodesia 632

CLINICAL NOTES:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Case of Surgical Emphysema as a Complication of Dystocia. By WILLIAM M. EMMERSON, L.S.A. 595

A Case of Extravasation of Urine. By THOMAS P. CODD, L.K.Q.C.P., L.R.C.S.Irel. 595

A MIRROR OF HOSPITAL PRACTICE.

ST. GEORGE'S HOSPITAL:
A Case of Excision of the Rectum for Carcinoma; Death 21½ years later from Secondary Deposits in the Liver. (Under the care of Mr. C. T. Dent) ... 596

REVIEWS AND NOTICES OF BOOKS.

A Text-book of Legal Medicine and Toxicology. Edited by Frederick Peterson, M.D., and Walter S. Haines, M.D.... 597

Lehrbuch der Kinderheilkunde. By Dr. Bernhard Bendix. Third Edition 598

Clinical Lectures on Mental Diseases. By T. S. Clouston, M.D., F.R.C.P. Edin. Sixth Edition 598

English Medicine in the Anglo-Saxon Times. By Joseph Frank Payne, M.D.Oxon. 599

Transactions of the Grant College Medical Society, Bombay 599

Nos. 3, 4, and 5 of the First Volume of the "Calcutta Practitioner" 600

ANALYTICAL RECORDS
FROM
THE LANCET LABORATORY.

Digitalone 600
Kolje 600
Ardenness Milk and Cream 600
New "Tabloids," "Soloids," and other Preparations 600
Scotch Whiskies 600
Brax Bread and Flour 601
The Aix-la-Chapelle Natural Products 601
Provost Oat Biscuit 601
Milo Food 601

NEW INVENTIONS.

All-metal Cover-glass Holder.—(*Illustrated*) 601

LEADING ARTICLES.

E BRITISH SCIENCE GUILD ... 621

THE METROPOLITAN HOSPITAL SUNDAY FUND COLLECTION ... 622

HE PHYSIOLOGICAL ASPECT OF THE ADMINISTRATION OF CHLOROFORM 623

THE HOSPITAL ISOLATION OF SCARLET FEVER 624

ANNOTATIONS.

The New Sydenham Society ... 625
The South African Medical Congress 625
In the Matter of Patent Medicines 625
The Chair of Pathology in the University of Manchester 626
The Work of the Government Laboratory 626
Upper Air Currents 627
The Testing of Clinical Thermometers 627
Sanitary Administration at Bexhill 628
Primary Tuberculous Endocarditis 628
Illiterates and the Midwives Act 628
The Value of Exploration in Suspected Malignant Disease of the Ovary 629
The Buying and Selling of Medical Practices 629
The Rangoon Lying-in Hospital 629
The Treatment of Appendicitis 630
The Localisation of Alkaloids in Plants 630
Mussel Poisoning 630
Certificates of Successful Vaccination in Scotland 630
The Tamworth Town Council and the Report of its Medical Officer of Health 631

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD.

Proceedings in the Sections:

Psychological Medicine: Mr. Conolly Norman on Dementia Præcox, or the Premature Dementia of Adolescents; Dr. Pasmore on How to Take a Family History; Dr. A. T. Schofield on the Cure of Quackery 603

Laryngology and Otology: Dr. J. Dundas Grant, Professor A. Rosenberg, and others on the Etiology, Treatment, and Prognosis of Innocent Growths of the Larynx; Dr. Greville MacDonald, Dr. Samuel West, and others on Intranasal Disease as a Determining Factor in the Production of Laryngeal and Pulmonary Affections 604

Dermatology: Mr. Malcolm Morris and others on Pruritus Ani; Dr. J. H. Sequeira and others on the Treatment of Lupus Vulgaris; Dr. Arthur Whitfield and others on Bacterial and other Factors in the Causation of Skin Diseases ... 607

Tropical Diseases: Dr. J. W. W. Stephens, Major Ronald Ross, C.B., and others on Malaria; Dr. F. M. Sandwith and others on Jaundice; Major W. B. Leishman, R.A.M.C., Major C. Donovan, I.M.S., and others on the Leishman-Donovan Body 611

Navy, Army, and Ambulance: Major E. C. Freeman, R.A.M.C., Surg.-Lieut.-Col. P. B. Giles, A.M.R., and others on Camp Sanitation; Colonel D. Bruce, R.A.M.C., on Malta Fever; Fleet-Surgeon P. W. Bassett-Smith, R.N., on the Etiology of Mediterranean or Undulant Fever; Colonel Squire on the Organisation during Peace of Civil Medical and Ambulance Aid 615

PUBLIC HEALTH AND POOR LAW.

LOCAL GOVERNMENT BOARD:
Annual Reports of Medical Officers of Health 636

VITAL STATISTICS:
Health of English Towns 637
Health of Scotch Towns 637
Health of Dublin 638

SPECIAL ARTICLES.

Asylum Reports 602
The Annual Report of the Chief Inspector of Factories and Workshops for 1903.—[First Notice] 632
Annual Report (for 1902) of the Registrar-General 634
The Report of the Sanitary Commissioner with the Government of India for 1902 635
International Congress of Otology 636
The Services 638
Birmingham 641
Liverpool 642
Ireland 643
Paris 643
Berlin 644

LOOKING BACK.
(From THE LANCET, Saturday, August 26, 1828) 631

CORRESPONDENCE.

Hot Weather and Food Preservatives (Dr. Thos. R. Bradshaw) 638
The Amalgamation of the London Orthopædic Hospitals (Mr. James A. Phillips) 639
Does Boiling Improve the Keeping Properties of Milk? (Mr. Richard Bevan) 639
Prevention of Puerperal Fever (Dr. Lovell Drage) 639
The Nomenclature of Malaria (Dr. E. Blake Knox) 640
Heredity (Dr. J. Beard) 640
The Eyre Testimonial (Dr. J. Eyre) 641
Laymen and Electrical Treatment 641
Wanted—a Home (Mr. E. T. Crouch) 648
Schools for Feeble-minded Children (Mr. E. Goodby) 648

MEDICAL NEWS.

North Devon Infirmary, Barnstaple 602
Vaccination Statistics 602
Death of a Centenarian 631
The War and the Supply of Medical Men for Civilians 633
Pass-lists of the University of London, Society of Apothecaries of London, and University of Oxford 645
Bideford Dispensary and Infirmary 646
Roentgen Rays for Moscow 646
The Stillborn of Warsaw 646
The late Dr. John Sutherland ... 646
A Hospital Curiosity 646
West London Medico-Chirurgical Society 646

Books, &c., received 646
Appointments 647
Vacancies 647
Births, Marriages, and Deaths ... 647
Notes, Short Comments, and Answers to Correspondents ... 648
Medical Diary 649

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX.

MEDICAL AND OTHER BOOKS AND PUBLICATIONS.

COVER.

PAGE

BAILLIERE, TINDALL & COX:—
Ball ..... Diseases of the Nose, &c. 1
Bell ..... Cancer Problem 1
Brass..... Atlas of Histology..... 1
Caldwell .... Prevention of Disease in Armies 1
Campbell, H. Respiratory Exercise in Treatment of Disease.. 1
Eccles ..... Hernia..... 1
" ..... Descended Testis 1
Frever ..... Stricture of the Urethra 1
Starr ..... Nervous Diseases 1

CHURCHILL, J. & A.:—
Fenwick,
E. H. .... Diseases of the Kidney 1
Gerrard .... Beri-Beri 1
Haig ..... Uric Acid 1
" ..... Diet and Food 1
Squire's Pocket Companion to the British Pharmacopœia 1
Taylor ..... Practice of Medicine .. 1

DAVIDSON:—
Grant ..... Model Throat 1

LEWIS:—
Campbell, H. Flushing, &c. 1
" Headache 1
Roth ..... Curvature of the Spine 1

MACMILLAN & CO.:—
Tubby & Jones .... Surgery of Paralysis .. 1

PENTLAND, Y. J.:—
Berry..... Manual of Practical Ophthalmology 1
Bruce ... .. Principles of Treatment 1
Cunningham. Text-book of Anatomy 1
" Manual of Anatomy.... 1
Gibson & Russell.... Physical Diagnosis 1
Muir & Ritchie.... Manual of Bacteriology 1
Treves & Miles..... Manual of Surgery 1

SAUNDERS & CO.:—
McFarland's Pathology 1
Saunders' Books on Pathology..... 1

SMITH, ELDER & CO.:—
Lawson .... Diseases and Injuries of the Eye 1

MEDICAL LIBRARIES, &c.:—
Clinical Journal 1

BAILLIERE, TINDALL & COX:—
Allingham .. Diseases of the Rectum 2
" .. Colotomy, &c. 2
" .. Operative Surgery 2
Bigg ..... Constipation 2
Campbell, K. Refraction of the Eye.. 7
Latham .... Sanatorium Treatment of Tuberculosis..... 7
" .... Pulmonary Consumption 7

BAILLIERE—(Continued).
Owen..... Cleft-Palate, &c..... 7
Younger .... Insanity 8

BALE, SONS & DANIELSSON:—
Moullin .... Inflammation of the Appendix 6
" .... Ulcer of the Stomach .. 6

CASSELL & CO.:—
Morris, M. .. Diseases of the Skin 6

CHURCHILL, J. & A.:—
Cripps ..... Ovariotomy, &c. 7
Harrison.... Stone, Prostate, &c. 7
Squire's Pocket Companion to the British Pharmacopœia 5

CORNISH BROS. (BIRMINGHAM):—
Sawyer, Sir J. Practical Medicine 7
" Insomnia 7

GLAISHER:—
Wes..... Granular Kidney, &c. .. 7

GRIFFIN & CO.:—
West ..... Organs of Respiration.. 7

KEGAN PAUL & CO.:—
Taylor ..... Diseases of the Eye 7

LEWIS:—
Martindale & Westcott .. Extra Pharmacopœia .. 6
Moullin .... Enlargement of the Prostate 6

LEWIS—(Continued).
Moullin .... Inflammation of the Bladder..... 6

MACMILLAN & CO.:—
Hewitt ..... Anæsthetics..... 6
Lockwood .. The Surgery of Appendicitis 7
Middlesex Hospital Reports 6

PENTLAND, Y. J.:—
Lockwood .. Aseptic Surgery..... 7
" .. Cure of Hernia, &c. 7

RENHAM:—
Senator & Kanitzer .. Health and Disease in Relation to Marriage.. 5

RENSHAW:—
Wood ..... Application of Tissues 7

SAUNDERS & CO.:—
Dürck & Steuton .. Special Pathologic Histology 3
McFarland .. Pathology 3
Nothnagel's Practice 6
Stengel..... Pathology 3
Text-book of Pathology 3

SMITH, ELDER & CO.:—
Keetley .... Orthopædic Surgery.... 7
" .... Gastric Ulcers..... 7
" .... Complicated Fractures 7

MEDICAL LIBRARIES, &c.:—
Behnke—Stammering 8

OFFICIAL AND GENERAL ANNOUNCEMENTS.

APPOINTMENTS VACANT:—
Bedford County Hospital 73
Berkshire County Council 73
Bradford Poor Law Union 74
Cardiff Infirmary 74
Cardiff Union 74
Carlisle Non-Provident Dispensary .. 73
Cheltenham General Hospital 73
Cumberland Infirmary, Carlisle 74
Down District Lunatic Asylum, Downpatrick 74
East London Hospital for Children, &c., Shadwell 73
General Hospital, Bootle 73
Glasgow Eye Infirmary 73
Great Yarmouth Hospital 73
Hampstead General Hospital 73
Hospital for Sick Children, Newcastle-on-Tyne 73
Infectious Diseases Hospital, Brandon 73
Liverpool Infirmary for Children 73
Liverpool Stanley Hospital 74
London Hospital, Whitechapel 73
London Temperance Hospital 74
Macclesfield General Infirmary 73
National Hospital for the Paralysed and Epileptic 73
Noble's Isle of Man General Hospital, Douglas 74
North Staffordshire Infirmary and Eye Hospital 74
Open-Air Sanatorium for Consumptives, Limpley Stoke 73
Rotherham Hospital and Dispensary 73
Royal Albert Hospital and Eye Infirmary 74
Royal Eye Hospital, Soho 73
Salford Royal Hospital 74
Stockport Infirmary 73
St. Peter's Hos. for Stone, &c., Covent-garden 73
Wandsworth Union 74
West Bromwich District Hospital 73
West London Hospital, Hammersmith-road 73
W. S. W. N., Cornhill 74

ASSISTANCIES, MEDICAL:—
K., Great Russell-street 81
Rimmer & Maxwell, Edinburgh..... 80
Maggrath, Wolverhampton 80
No. 339, L.O., Strand..... 80
No. 343, L.O., Strand..... 81
No. 344, L.O., Strand..... 80
No. 345, L.O., Strand..... 80
No. 370, L.O., Strand..... 80
No. 371, L.O., Strand..... 80
No. 372, L.O., Strand..... 80
No. 373, L.O., Strand..... 81
No. 374, L.O., Strand..... 80
No. 380, L.O., Strand..... 80
No. 381, L.O., Strand..... 81
Owen, Fishguard 81
sucker, Strand 80
Surgeon, Chellaston 80
Turner, Adolphi 80

ASYLUMS, HOMES, &c.:—
Aberystwith, the Hafotia of Wales .. 67
Alexwood House, Kingswinford 65
Arnwood House Hospital 66
Bishopstone House, Bedford 65
Bodorgan Manor, Bournemouth 71
Camberwell House, Peckham-road..... 65
Clarence Lodge, Clapham-park 71
Coppice, The, Nottingham 66
Delawold Sanatorium 65
Dr. Crookshury Sanatorium, Surrey..... 61
Dalrymple House, Rickmansworth .. 65
Dartmoor Sanatorium 66
Denton Hohne Sanatorium, Parkstone 65
Dunmarry, Clifton 65
Dunstone Park Sanatorium, Paignton 71
East Anglian Sanatorium, Nayland .. 66
Fairford Retreat, Gloucestershire 71
Ferguson, Rarnet 71
Finsen Light Cure, &c., Norwich 72
Flower House, Catford..... 66
Grove House, Church Stretton..... 66
Grove, The, Catton, Norwich 66
Hailey Open Air Sanatorium, Ipsden 69
Harrison Home for Epileptics, Maghull 71
Hazlemere Invalid Home 71
Haywood Lodge, Newton-le-Willows.. 67
Headmaste-, Sparsholt 73
Herrison, Dorchester 65
High Shot House, Twickenham 65
Hitch, Mrs., Hollington 70
H., Vincent-square..... 71
Inverraith Lodge Retreat, Collingarth 65
Lady Superintendent, Brighton 71
Lady Superintendent, Streatham 71
Lawson, Mordrach-on-Dee, Banchory 66
London Open - Air Sanatorium, Wokingham 70
Lufthar Sanatorium, Farthury 70
Maternity Home, New King's-road.. 71
Melbourne House, Leicester..... 66
Middleton Hall, Co. Durham 65
Moat House, Tamworth 66
Moorcote, Bversley 71
Mordrach in Wales..... 66
Mordrach-upon-Mentlp Sanatorium .. 66
Northlands Retreat, Wandsworth 65
Northumberland House, Finsbury-pk. 61
Northwoods House, Winterbourne.... 67
Norwood Sanatorium 71
No. 295, L.O., Strand..... 71
No. 340, L.O., Strand..... 71
No. 360, L.O., Strand..... 71
Oaklands Sanatorium 66
Overdale, Whitefield 71
Painswick Sanatorium 69
Pine-yn-Dinas, Merionethshire 67
Plympton House, South Devon 66
Saltburn-by-the-Sea, Yorkshire 66
Shaftesbury House, Formby..... 67
Sidlaw Sanatorium, Auchterhouse ... 69
Springfield House Private Asylum, Bedford 65
St. Andrew's Hospital, Northampton 66
St. Luke's Hospital, E.C. 66
Stocker, Craven-street 71
Stone House, Canterbury 71
Stretton House, Church Stretton 66
Sunshine, Guy's Hospital 71
Thundercliffe Grange, nr. Rotherham 71
Tower House, Leicester 66
Vale of Clwyd Sanatorium..... 65
Warneford Asylum, Oxford 61
West Malling-place, Kent 64
Winchester House, Kingston-hill 65
Wonford House, Exeter 66
Wye House, Buxton..... 66
Wyke House, Isleworth 66
Yarrow Convalescent Home, Broadstairs..... 67

BATHS:—
Moffat Hydropathic 72
Smedley's, Matlock 72
Woodhall Spa Baths 70

COMPANIES:—
No. 393, L.O., Strand..... 81

FINANCIAL &c.:—
Birkbeck Bank 72
English and Scottish Law Life Office.. 72
Equitable Reversionary Interest Soc. 72

HOTELS:—
Barton Court Hotel, New Milton 65
Ilfracombe—Ilfracombe Hotel..... 65
Montreux Hotel and Chateau, Belmont 65

HOUSE & ESTATE AGENTS:—
Brondesbury Villas, Kilburn 75
Elliott, Son, & Boyton, Vere-street.. 79
F., Willesden 79
Humbert & Flint, Lincoln's Inn 79
Wrakin, Chancery-lane..... 79
Folly, Malvern 77
Wavesshaar, Railig 79
Treaidder & Co., Cockspur-street 79
Watson & Lee, mount-street..... 79
99, Gower-street 79

LIFE & FIRE ASSURANCES:—
Prudential 72

MEDICAL ACCOUNTANTS &c.:—
Turner 80

MEDICAL AGENTS:—
Hall & Hardwicke 77
Lee & Martin..... 79
London Medical Agency 77
Manchester Medical Agency 78
Medical Agency 75
Moore 77
Moore, Herbert 77
Needes, J. C. 78
Orridge..... 14
Peacock & Hadley 77
Scholastic, Clerical, &c., Assoc 78, 79
Turner 78
Wilson & Son 78

MEDICAL SCHOOLS (LONDON):—
Charing Cross Hos. Medical School .. 58
Cooke's School of Anatomy 59
Guy's Hospital Medical School 58
King's College, London 59
London Hospital Medical College 57
London (Royal Free Hospital) School of Medicine for Women 58
Medical Graduates' College, &c. 59
Middlesex Hospital Medical School .. 58
Royal Dental Hospital of London 58
St. Bartholomew's Hos. and College.. 57
St. George's Hospital Medical School 57
St. Mary's Hospital Medical School .. 58
St. Thomas's Hospital 58
West London Post-Graduate College.. 61
Westminster Hosp. Medical School.... 59

MEDICAL SCHOOLS (PROVINCIAL):—
Anderson's College Medical School, Glasgow 60
Queen Margaret College, Glasgow 61
Queen's College, Cork 61
St. Munzo's College, Glasgow 60
University College, Bristol 61
University of Birmingham..... 61
University of Durham College of Medicine 60
University of Liverpool 61
Victoria University of Manchester.... 61

NURSING INSTITUTES:—
Clapham Maternity Hospital..... 64
General Nursing Association 64
Hos. for Sick Children, 49, Ormond-st. 64
Leeds Trained Nurses' Institution 64
London Nurses' Association 64
Male and Female Nurses Assoc..... 64
Male Nurses' Association 64
Male Nurses' Co-operative 64
Middlesex Hos. Trained Nurses' Inst. 64
Nurses' Co-operation, Portland-place 64
Queen Charlotte's Lying-in Hos..... 64
St. John's House 64
Temperance Male and Female Nurses' Co-operation 64
Temperance Male Nurses' Co-operation 64
York-road General Lying-in Hospital, Lambeth 64

OFFICIAL NOTICES:—
Guy's Hospital 62
King's College, London 59
London Hospital Medical College 57
London Post-Graduate Association .. 62
London Throat Hospital 61
Naval Medical Examination 63
Royal College of Physicians of Lond. and the Royal College of Surgeons of England 62
St. John's Hos. for Skin Diseases 61
University of Cambridge 61

PARTNERSHIPS & PRACTICES:—
M. D. Essex-street 79
No. 319, L.O., Strand..... 80
No. 331, L.O., Strand..... 79
No. 342, L.O., Strand..... 79
No. 349, L.O., Strand..... 79
No. 357, L.O., Strand..... 79
No. 361, L.O., Strand..... 79
No. 363, L.O., Strand..... 79
No. 365, L.O., Strand..... 79
No. 375, L.O., Strand..... 79
No. 376, L.O., Strand..... 79
No. 377, L.O., Strand..... 79
No. 378, L.O., Strand..... 79
No. 379, L.O., Strand..... 79
No. 382, L.O., Strand..... 79
No. 383, L.O., Strand..... 79
No. 384, L.O., Strand..... 79

RAILWAY & STEAMSHIP CO.'S:—
New Zealand Shipping Co..... 72
Orient-Pacific Line Pleasure Cruises.. 72
Royal Mail Steam Packet Co.—Tours 72

SCHOOLS, PREPARATORY, &c.:—
Lang'and College, Eastbourne..... 63
Manchester Physical Training College 63
School Skin Conway 63
Swedish Clinique & School, Cromwell-road 63
Theta, Craven-street 80

TUTORS & LECTURERS —
B. Sc. 63
Valleywidge 67
Gemmell 63
Geoce 62, 63
Kerr 63
No. 362, L.O. 63
No. 382, L.O. 63
No. 384, L.O. 63
Van Praagh 63
Weymouth..... 62

(For Index to Trade and Miscellaneous Advertisements see page 4.)

A Presidential Address

ON

PREVENTIVE WORK IN THE TROPICS.

Delivered before the Tropical Section of the Congress of the Royal Institute of Public Health held at Folkestone, July, 1904.

BY W. J. R. SIMPSON, M.D. ABERD., F.R.C.P. LOND.,

PROFESSOR OF HYGIENE, KING'S COLLEGE, LONDON; AND LECTURER ON TROPICAL HYGIENE AT THE LONDON SCHOOL OF TROPICAL MEDICINE.

GENTLEMEN,—My first duty is to convey to you my cordial thanks for the honour you have conferred on me in inviting me to be the President of the Tropical Section of this important Congress. Without further remark I shall proceed to the subject of my address—viz., Preventive Work in the Tropics.

HISTORICAL RÉSUMÉ OF ADVANCES IN TROPICAL HYGIENE.

The history of preventive medicine in the tropics so far as the British possessions are concerned is similar to that of Great Britain but differs in being many chapters behind. To a limited extent the practice of preventive medicine in the tropics has been based on the results of general observations and experience on the spot guided by the tenets which have held sway in England, the underlying principle of which is that cleanliness in its widest sense is the chief sanitary law. It is a good foundation to work upon and if later discoveries show that it does not cover the whole field of preventive medicine there can be little doubt it includes a very large portion. Before Pasteur's work revealed to us the process and meaning of putrefaction and fermentation and led to those epoch-making discoveries which resulted in the recognition of many of the bacterial agents of disease, the sanitarians of the time held that the best way to secure the well-being of the community and freedom from disease was the practice of measures having for their aim the purity of air, water, food, and environment. The success which attended action based on this principle is written large in the records of the great changes and improvements in the healthiness of localities which at one time were designated "the white man's grave." Lest we forget their importance and significance when the microscope and the laboratory bulk largely in the domain of preventive medicine I shall recall to your mind some of the triumphs secured by general sanitary measures. They are necessarily mainly taken in connexion with the army and the army surgeon, the latter of whom in the early days of colonial enterprise and expansion had charge of the troops and of the small white population who formed the vanguard of that large body of our countrymen who now spend so much of their lives in our great tropical colonies and dependencies. In the early days of our occupation of the West Indies, fever, scorbutic dysentery, and phthisis played such havoc with the troops that it was estimated that the lifetime of a regiment 1000 strong was about five years. This mortality was at first attributed to the climate until experience showed it to be due to removable causes. It occurred under the following conditions. The food of the soldiers consisted mainly of salted meat with but a scanty supply of fresh vegetables, the drinking water was taken from polluted sources, the barracks were built on unhealthy sites and were ill-constructed, they were without adequate ventilation and were overcrowded, the cubic space for each man being about 250 feet. The sanitary arrangements were foul and often of the most primitive character. These conditions, associated with a want of knowledge as to the necessity of adapting the customs followed in a cold climate in regard to food, drink, dress, and exercise to those most suited for a tropical country, accounted in a large degree for the deplorable state of ill-health. The mortality for Europeans in the 20 years from 1817 to 1836 was in Jamaica 121 per 1000, in Trinidad 106, in Barbadoes 55, and in St. Lucia 122. When the conditions mentioned were improved a steady decline took place in the death-rate. In India the death-rate of the soldier has also fallen from 80 per 1000 to 16 per 1000. A marked decrease in mortality has also occurred among the civil population in a few of the principal towns of India owing largely to a greater freedom from cholera and fever brought about by the introduction of pure water-supplies, good drainage, and supervision of the sanitary arrangements by specially appointed medical officers. There has also been a great decline in the death-rate of European officials in the west coast of Africa, which in the early part of last century was worse than that in the West Indies, and there can be little doubt that, with a continuance of the policy lately introduced by Sir Matthew Nathan and Sir William McGregor, there will be further improvement.

That is one aspect of preventive medicine in the tropics and a very pleasing aspect it is as far as it goes. It shows what can be accomplished in special communities by sanitary organisation and administration and it is an indication of that which can be done on a much larger scale. The next step is that the work which has been so beneficial to a few individuals and to special communities shall be extended on the same lines to larger communities, and gradually as much as possible to the countries generally under our charge. In advocating extension on the same lines I include the making use of the discoveries which have been made from time to time by the pursuit of researches in the laboratory by experimental work, by epidemiological inquiries, and by investigation into outbreaks. Each of these methods in its own way advances our knowledge concerning the causation of disease. To-day laboratory methods are more in the foreground than the others, and at the present moment deservedly so because of the conspicuous successes which have followed activity in this particular line of research.

It is not surprising that the microscope and the laboratory should hold the position they do in tropical medicine, for the advances achieved by workers making use of them are little short of marvellous. I need only bring to your memory the discovery of the cholera bacillus by Koch; of the malarial parasite by Laveran and of its life cycle in the mosquito by Manson and Ross; of the micrococcus of Malta fever by Bruce; of the trypanosome of sleeping sickness by Castellani and Bruce; of filaria by Lewis and its life history by Manson; of the plague bacillus by Kitasato and Yersin; of the Leishman-Donovan bodies by Leishman and Donovan found in cases diagnosed as malarial cachexia with enlarged spleen and which differentiates one of those unclassified fevers which Crombie drew attention to some years ago. Then there are the numerous discoveries connected with ankylostomiasis, bilharzia, guinea worm, and other tropical diseases. This incomplete list represents achievements of the highest order which it may be taken for granted are but forerunners of further successes. With such brilliant results there is no chance of this side of preventive medicine languishing, except so far as it needs money and organisation for its further development. That such developments are needed is patent on every side, for we are very far from knowing all that can be learnt from laboratory methods in any of these diseases and there are hosts of other diseases still to be studied. But while appreciation of this line of research cannot be too great it must not be forgotten that the modes by which some of the most important epidemic diseases spread and the general laws which they follow were ascertained by field work as distinguished from laboratory work and before the causal agent or microbe of these diseases was discovered. I need only refer to cholera, typhoid fever, and dysentery, whose relations to contaminated water were so fully established by other than laboratory methods and which led to great practical reforms. Each method has its particular function and the true position of laboratory work is as a part of preventive medicine but not the whole. Progress will best be secured by making use of all the methods available and by bringing into practical use the knowledge which they furnish us with.

Next in rank to the discoveries of Jenner, Pasteur, and Lister I place those of Ross and Manson founded on that of Lister. To my mind the discoveries connected with malaria mark as great an epoch in the history of preventive medicine as those of Pasteur at an earlier date in that they deal with a disease which is universal in the tropics and they open a new field of research which is likely to throw light on a similar class of diseases. All our former ideas on the

causation of malaria have been completely overthrown. The general observations on the conditions connected with malaria were accurate enough. It was known that the night was the most usual time for contracting fever and that marshes and damp places were the favourite haunts of disease, but it remained for Ross and Manson to show that neither night air nor marshes are infective if the anopheles containing the parasite of malaria was not there and that the very name of malaria was a misnomer.

IMPORTANCE OF GIVING PRACTICAL SHAPE TO OUR RECENTLY ACQUIRED KNOWLEDGE.

It is not necessary at a meeting like this to dwell on the great prevalence of malaria in India and in our own tropical colonies. I will content myself by stating that in India in 1902 20 per cent. of the admissions to the European military hospitals and 38 per cent. of the admissions to the native military hospitals were from malaria. In the same year over 4,000,000 deaths were recorded from fevers among the general population. Of these figures relating to the civil population it is impossible to say what is the exact proportion of malarial fever owing to the absence of registration of deaths supported by a medical certificate, but there is a general medical opinion that malarial fever represents the major portion.

That which obtains in India exists even to a greater extent in our tropical colonies, so that in both there is an immense field for the prevention of malaria and for a campaign against the mosquito. The possibilities attending such a campaign with a properly organised service to carry it out continuously may be gauged from that which has happened in Havana both in regard to yellow fever and malaria. The city of Havana, which has now a population of 250,000, has been for nearly 150 years scourged with yellow fever. In February, 1901, with the administration of Governor-General Wood a campaign was begun against mosquitoes in localities infected with yellow fever. The system introduced was to kill infected mosquitoes in the neighbourhood of each point of infection as it developed. The result was that by November of the same year Havana was free of yellow fever, an occurrence which had been unknown since 1762.

Major Ross in his lecture to the Royal Colonial Institute in November, 1903, brought before the notice of the audience a communication received from Colonel Gorgas, the chief sanitary officer of Havana, in which it was pointed out that in 1900, the year before the mosquito work began, there were 325 deaths in the city from malaria; in 1901, the first year of the work, 157 deaths from that disease; in 1902, the second year, 77 deaths; and for the first five months of 1903 21 deaths. Colonel Gorgas was of opinion that there was good hope of the extinction of malaria in Havana. Anyone studying these figures must be struck with the remarkable results, and when for every death from malaria there is considered the large number that suffer from the disease the change in the public health of the inhabitants of the city of Havana is beyond all bounds of expectation. The success should be an incentive to the local administrations of English colonies to go and do likewise. Nothing on the scale of Havana has been attempted elsewhere but some small experiments in the same direction and attended with success have been made in Lagos under Sir William McGregor and his medical staff and in Cape Coast under the governorship of Sir Matthew Nathan and the direction of Dr. M. Logan Taylor. Excellent reports are also furnished from Hong-Kong and from Klang in the Malay Archipelago respectively by Dr. Thompson and Dr. Travers regarding the reduction of incidence of malaria after certain drainage works. To these may be added a diminution of malarial fever to the extent of over 80 per cent. in Ismailia in consequence of the carrying out by an effective medical department of the Suez Canal Company of some recommendations made by Major Ross who visited Ismailia for the purpose.

On the other hand, a test experiment was made at Mian Mir in which a quarter of the cantonment was subjected to the destruction of mosquitoes and mosquito larvæ. The results seem to have been to reduce the fever during the first two months of the fever season but to have had no effect in the succeeding two months, fresh mosquitoes and larvæ being brought into the treated area by numerous avenues which it seems difficult to block. One medical man's time was wholly taken up with this work. In reading the Director-General's report on this experiment one cannot help thinking that the experiment would have been more successful if four medical men had been employed to treat the whole cantonment, and that the results would have been clearer if some of the troops outside the treated area had not at the same time been treated with quinine as a prophylactic. It only requires a statement of the places in which preventive work against malaria has been attempted, guided by our most recent knowledge, to show that the importance of Manson's and Ross's discoveries is not yet fully realised and that practical measures based on them have still to be put into operation by sanitarians. Much of the inactivity may, however, be explained by the lack of machinery and of organisation necessary for such an undertaking, and this brings me to a consideration of the general question of sanitary organisation which is so much needed in the tropics not only against malaria but against other diseases. In this connexion I shall refer to some further experiments which it is proposed to carry out against the mosquito in India. They are to be made in certain selected municipalities in the Central Provinces where the sanitary commissioner evidently takes a great interest in the subject. The civil surgeon is to supervise the work and civil surgeons in general have been instructed to make search from time to time in all municipal towns in their respective districts for the breeding places of malaria-carrying mosquitoes and on the discovery of these to take such remedial action as may be possible in communication with the deputy commissioners and the president of the municipalities, a note of the action and its results being made in their annual sanitary report. This is excellent and shows that the sanitary commissioner thoroughly appreciates the importance of the work of Ross and Manson; but without wishing to damp the ardour of those interested in the experiment I hope that it will not be made, because unless an experiment of this kind is made under the best conditions it is apt to do harm to the cause.

LACK OF ORGANISATION THE CAUSE OF FAILURE TO DEAL EFFECTIVELY BOTH WITH MALARIA AND PLAGUE.

Ten years ago, in 1894, at the Indian Medical Congress held in Calcutta advocating the need of a separate sanitary service for India I showed that the civil surgeon was overworked, being overwhelmed with his professional duties which often included those of the hospital and jail, and that though he was *ex officio* a health officer he had neither the time to devote to sanitary work nor the power to enforce his recommendations; and that the sanitary commissioners who did devote their whole time to the duties were so few in number as to be unable to exercise any control or influence over epidemic disease. In illustration I quoted Bengal, one of the principal and most advanced provinces of India, which is more than two and a half times the area of England and contains nearly two and a half times its population. It possesses a health officer for the metropolis, 48 civil surgeons, one sanitary commissioner and three deputy sanitary commissioners, and I pointed out that if Bengal alone were provided with the same strength of sanitary officers per population and per area as in England, then instead of four sanitary and deputy sanitary commissioners there would be 35 and some 3200 health officers. This did not include the army of sanitary inspectors, who in England are necessarily more numerous than the medical officers of health, nor sanitary engineers of whom there is a large number. The contrast will serve to show the defenceless state of Bengal against disease, the absence of the possibility of efficient administration in health matters, and the necessity for large and comprehensive changes. That which prevails in Bengal prevails more or less in Bombay, the North-West Province and Oudh, the Central Provinces and the more advanced parts of the Punjab, Assam and Burma. In Madras, under Colonel W. G. King, a more organised system exists. In the less advanced parts I was satisfied to leave sanitation to the planter and road-maker. It is obvious that under such conditions the fight against malaria must be rather a hopeless affair, much in the same way as the fight against plague has proved perfectly futile. 40,000 deaths a week from plague is the bill of mortality which has to be paid in India during the height of the plague season, because of a want of machinery to deal with it even on the lines of our existing knowledge as to its mode of spread, and because of the many things we do not know concerning plague which can only be learnt by organised methods of research associated with the sanitary administration.

The failure to deal with plague in India is generally attributed to the apathy and actual hostile attitude of the

inhabitants, and, no doubt, much is to be said on that side. I am familiar with that argument, applied as it is to the obstruction of every sanitary movement, however simple it may be, but there is another side which is seldom mentioned—viz., that there is no adequate and efficient sanitary army of defence in the country trained, equipped, and organised not only to combat plague and other epidemic diseases but to carry on the ordinary sanitary administration of the country. That which exists has done splendid work in the collection of statistics, the providing of water supplies, and the spread of vaccination, but these are about all it can possibly accomplish and these only to a limited extent. It is easy to blame the people for insanitary habits, but if elaborate provision had not been made for the existing sanitary administration in England do we think we should have been in the advanced condition we have now reached? If the scheme which I drew out in 1894 after consultation with some civil surgeons over different parts of India and which brought into requisition a trained sanitary service of Indian medical men supervised by Europeans had been carried out England would probably have been in a different plight from what it is to-day. The scheme was accepted by the Indian Medical Congress in the form of a resolution to the Government of India with a view to its practical adoption and later it was accepted by the Government of India. Evidently it has never been put into practice, for we find that in 1901 the Plague Commission recommends a similar scheme. The fundamental proposals in that scheme, as stated by Sir Thomas Fraser, are an increase in the number of officials specially qualified in public health and the formation of a separate sanitary service controlled by one medical director attached to the supreme Government who shall be required to devote his whole time to sanitation and shall be provided with an adequate staff. He further stated that "our recommendations" (i.e., the plague commissioners) "also include proposals which if adopted will, it is to be hoped, afterwards give place to more satisfactory permanent arrangements. In view of the engrossing and multifarious nature of their other duties it does not appear possible for civil surgeons even to inform themselves of the sanitary requirements of their extensive districts, much less to supervise or direct sanitary affairs in them, and therefore the recommendations we have made regarding these officials should, I think, be regarded as only a temporary expedient, to be afterwards superseded by the appointment of health officers whose time would be entirely devoted to sanitary work."

Is it not Time that the Sanitary Reforms Long Recognised as Necessary for India Should be Carried Out?

Is it not time that further representations should be made on this subject? Lord Curzon has the interests of India most closely at heart and he possesses the power and energy to carry out a great reform. Might not the Royal Institute of Public Health approach the Viceroy of India on this important subject? However difficult the task may be the duty and responsibility of this country towards India and the welfare of its people demand that everything that science can accomplish shall be done to prevent the havoc that is being caused by the prevalence of plague. It is now eight years since plague reached India and it is worse to-day than it ever was. Nearly a million died from it last year. The disease takes on many types. Of the bubonic form most countries in direct communication with India or China have had experience and for the most part hitherto it has appeared to be an easily-manageable disease, but while the disease prevails in India on the extensive scale it now does there is no saying when it might take on the influenza type and then there would be the risk of it passing beyond the borders of India and invading Europe. In doing this the pandemic would only be repeating that which happened 550 years ago.

In order not to be misunderstood and to avoid the impression that credit is not given where credit is due I would point out the great work which the Government of India has done in the campaign of plague, the large amount of money it has expended on plague measures, and the strenuous efforts it has made with the material it possesses to control the disease. These efforts in the circumstances without a trained executive were, however, doomed to failure and could have been easily anticipated. Particularly would I draw attention to the strong support which the Government of India has given to Haffkine and his inoculations against plague and of the excellent results which have followed their use. Except in the case of the unfortunate accident which occurred in 1902 these inoculations have proved successful wherever they have been applied. With this, as with its other defensive measures, the Government has had great difficulties to contend against owing to a prejudice against the mode by which the prophylactic is administered. That prejudice, I may say in passing, is not confined to India, and it is a question whether more notice should not be taken of this fact and some other mode of administering the prophylactic sought if possible.

Preventive Inoculations as at Present Carried Out not Adapted to General Application.

People who are very ill do not mind being treated by hypodermic injections but when they are well and it is to protect them from some prospective illness very few will undergo the operations. This applies to all prophylactic inoculations whether for cholera, typhoid fever, or plague. No one has been a greater advocate of preventive inoculations than I, nor does anyone entertain a higher opinion of their value when they can be applied; but after an experience of ten years in different circumstances I am convinced that prophylactic inoculation by a hypodermic syringe, though invaluable, is not likely to be adopted for general application. I fear it is not in preventive inoculation as now applied that any general salvation is to be obtained from typhoid fever, cholera, or plague. The lower animals can be immunised from epizootics by preventive inoculations but the method which is applicable to them is not applicable to man when it comes to be practised on a large scale. Our minds must therefore be directed to immunising the human body by some other method. I think that in these circumstances experiments should be made on the immunising effect of the different prophylactic fluids when administered by the mouth. I am aware that it is stated that probably the toxins would be destroyed by the gastric and intestinal juices but this in regard to plague is merely a matter of opinion and not supported by experiments. Some experiments begun in South Africa indicated that absorption of Haffkine's plague prophylactic by the alimentary canal might by no means be impossible. This question can only be settled by experiment and as it is not one which should be left to private research it is the duty of the Government to have such experiments undertaken and if the experiments fail to pursue the investigation of a prophylactic further in other directions. This much may be said for India that however inadequate the sanitary organisation of India may be for its needs, it being an immense country, it is with few exceptions in general advance of that in our tropical colonies. It possesses sanitary commissioners devoting their whole time to their work, provincial sanitary boards, and a medical board at the India Office, all directing and controlling as far as the organisation permits sanitary and medical work; annual reports are issued and attention is drawn to the most important defects. This organisation directs the sanitary work of the numerous municipalities in every province, more especially as regards water-supply and conservancy, and superintends the many pilgrimages which are a feature in India and which before supervision were always a danger from epidemic disease; it has done excellent work in providing water-supplies and in having the population vaccinated. Its great defect is its lack of trained executive officers.

An Imperial or Colonial Sanitary Service Needed.

The lack of special machinery for the carrying out of sanitation and for the diminution of malaria in our tropical colonies as distinguished from India was fully recognised at the Congress held last year at Liverpool, when at one of its meetings in conference with the Liverpool Chamber of Commerce and members of the chambers of Manchester and London resolutions were passed with special reference to West Africa that (1) a fully qualified medical officer of health should be appointed to each of the principal West African towns; (2) that this officer should be supervised by a sanitary commissioner working on the Indian model of sanitation; and (3) that an annual report regarding the West African colonies should be regularly published. Has any action arisen out of these resolutions? I hope the Royal Institute of Public Health will not be content with passing resolutions at its different congresses and then forgetting them. Discussed and passed by men interested in the welfare and commerce of South Africa they would, I am sure, be received sympathetically by those in authority who

have always shown interest in the welfare of those under their charge, but whose difficulty, no doubt, at first will be ways and means. It is not in West Africa alone, however, that we need such a service. We need, as I stated in my address at Aberdeen in 1900, an imperial or colonial sanitary service. Towards the furtherance of a sanitary service of this kind the establishment of the schools of tropical medicine and hygiene in London was the first step. It renders the creation of such a service possible. With the necessary adjustment for local circumstances a sanitary organisation should be extended to all our tropical colonies that are in an advanced and settled condition. If this organisation were supplemented at the Colonial Office by an advisory board having the present distinguished medical adviser as its president, whose duties would be to read the sanitary reports and advise the Government on the many problems which arise in connexion with health matters, we should be on a fair way to being in a position to apply in a systematic and scientific manner practical measures based on the discoveries in malaria and other tropical diseases to their prevention.

ABSTRACT OF

A Clinical Lecture

ON

THE DIAGNOSIS OF OSTEO-SARCOMA OF THE LONG BONES.

Delivered at St. Thomas's Hospital on June 16th, 1904,

BY WILLIAM H. BATTLE, F.R.C.S. ENG.,

SURGEON TO ST. THOMAS'S HOSPITAL.

GENTLEMEN,—We have recently been considering the subject of osteo-sarcoma in the wards owing to the presence in the Beatrice Ward of a patient with a hard tumour of the ilium of rapid growth. It is, however, most frequently in connexion with the femur that such growths are found and in the thigh there are difficulties in the diagnosis which are worth presenting to you. You will have no difficulty in making a diagnosis in cases of ordinary exostosis, ossification of tendons, or ossification of tendons near a Charcot's joint. Central myeloid growths with their thin coating of expanded bone are usually easy to comprehend and I do not refer to them but to the sarcomatous growths, mostly peripheral in origin, in which bony tissue has developed and which have attained a large size when they present themselves for treatment. As a rule, in such cases we get an account of a tumour of rapid painless growth, with, or perhaps without, a history of injury. The tumour is hard, without tenderness, and has a well-defined, somewhat abrupt margin. An x-ray photograph probably shows an invasion of the new growth by spicules and irregular columns of new bone which radiate from the periosteum almost to the periphery of the growth. Should this arrangement of permeating bone be different and the amount of softer growth of the periphery almost imperceptible then difficulty arises, especially if there is a clear history not only of injury but of actual fracture of the bone. Of this fact the case of the patient who was shown by me at the Medical Society of London in 1901 is a good example and a photograph of the limb is reproduced in the Transactions of the Medical Society of London for that year (Fig. 1). Part of the tumour can be seen in the prepared specimen before you which resembles in section the appearance of the skiagram reproduced (Fig. 2).

The patient was a boy, aged three years and nine months, sent to me by Mr. F. W. Waters of Sheerness, and admitted for a swelling of the thigh into Leopold Ward, St. Thomas's Hospital, on Nov. 8th, 1901. The following is from notes by Mr. G. T. Birks. There was no family history of tumours. (The mother of the boy developed sarcoma of the thigh and underwent amputation at another hospital some months after the boy had undergone amputation for his tumour.) It appears that on April 1st the patient fell and broke his left thigh. He was taken to a medical man three days later and the limb was put in a plaster-of-Paris splint. Three weeks later the splint had to be removed on account of the increased size of the thigh. Sand-bags were then employed for two weeks to keep the limb at rest. His mother said that the affected thigh had at one time measured 25 inches in circumference but was now diminishing. He was in no way out of health at the time of the accident or afterwards.

On admission the state was as follows. "The left thigh exhibits a smooth, somewhat fusiform enlargement extending from the knee to the hip. The greatest circumference of the left thigh is 14 inches, that of the right thigh is 7½ inches. The swelling is very smooth and of bony hardness and there is not a great deal of tissue intervening between it and the skin. Both above and below there is a very distinct raised outline to be felt on deep pressure. This enlargement extends all round the femur. The left leg cannot be flexed to a right angle owing to the projection of the tumour posteriorly. There is no limitation of movement at the upper end and no enlarged glands in the groin (Fig. 1). The boy appears remarkably healthy, cheerful, and free from pain, being able to run about without apparent difficulty, and there are no secondary growths to be felt. He sleeps well. The urine is normal." A skiagram showed that the whole shaft of the femur was involved in the growth, which had a very definite bony outline, whilst the substance of the tumour was traversed by a network of wavy bony lines which did not radiate from the shaft of the femur. There had been a fracture of the middle of the shaft. Some days later the tumour was again examined with the x rays and its upper limits were clearly defined, whilst the whole skeleton was searched for evidence of secondary growth but none was found. On Dec. 13th the limb was amputated at the hip-joint. The abdominal aorta was compressed by the finger of an assistant, an Esmarch's bandage was applied up to the knee, and the limb was removed after the formation of skin flaps and division of the muscles close to the pelvis. During the operation normal saline solution was injected into the subcutaneous tissue of the arm as the veins were too small to be used. The limbs were wrapped in flannel bandages and other precautions were taken against shock. Union took place by first intention and he left for home on Jan. 18th, 1902.

A few days before leaving a swelling was found about the upper end of the left ulna; this did not, however, develop, but in 1903 the patient returned to the hospital with a rounded growth of the lower end of the right femur, similar in feel and in appearance under the x rays to the tumour of the thigh which had been removed by amputation. No operation was recommended. His general health continued good.

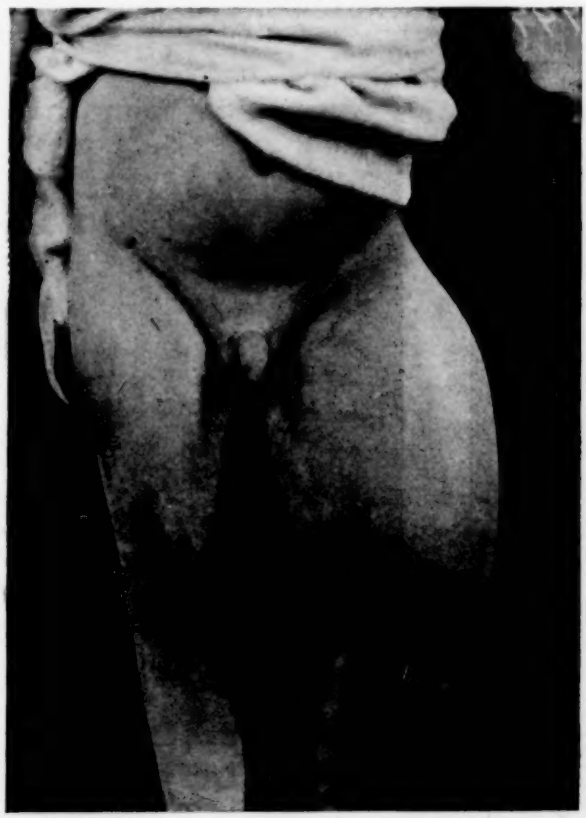
This tumour had not quite the usual feel of an osteo-sarcoma of the femur, for there was apparently nothing but bone, and one suggestion offered at the meeting of the Medical Society was that it was simply a large mass of callus developed after a fracture of the femur, associated with an extensive blood extravasation. I was not able to accept this suggestion, although the bone arrangement as shown by the x rays was unusual, for it appeared to me that the upper limit of the swelling was too abrupt and the swelling too large for anything but a sarcomatous growth. A swelling produced by callus should have subsided to a much greater extent, considering the time that had elapsed since the injury, and have been of a more marked spindle shape.

A case to which I alluded at the discussion on this patient at the Medical Society, in which a woman suffered a spontaneous fracture of the femur and in whom an extensive deposit of callus followed resembling a sarcomatous growth, was that of a married woman, aged 35 years, who was admitted to the Elizabeth Ward on May 16th, 1900, with the following history (from notes by Mr. Sampson). On March 2nd of that year the patient, who had alighted from a tramcar, was walking across the road to the pavement when she suddenly felt severe pain in the left hip and became unable to walk or even to put her foot to the ground. She was conveyed home and the medical man who was called in told her that she had broken her hip. She was in bed for seven weeks; she noticed that her hip and knee both became swollen and that discolouration showed about both joints. She had pain until a week before admission and when it ceased she got up. She then discovered that the left leg was shorter than the right and that it gave her much pain to put the foot to the ground. Since March she had been losing weight. She had complained of pain in the leg for

about two years before the accident but had had no difficulty in walking and noticed no difference in the length of the limbs. There was no history of syphilis.

On admission the following notes were made. "She is a fairly well-nourished woman with a large swelling of the left thigh. This is hard to the touch, somewhat irregular in outline, evidently attached to the bone. Chiefly prominent on the outer side of the thigh it extends over the upper third of the bone; it is not very tender on examination. There is about an inch shortening. The great trochanter of the femur appears displaced upwards but it is difficult to make certain of this as there is so much swelling in this part. The hip-joint does not appear to be affected but there are wasting and some weakness of the left thigh. The reflexes are absent in both knees; the ankle and patellar clonus are also absent. The eyes are normal. Condition generally good. The temperature is normal." A skiagram taken on May 12th showed that "there had been an old fracture of the femur about two inches below the great trochanter. The upper fragment is abducted, causing the angle formed by the neck and major part of shaft to approach a right angle." Extension applied to the thigh appeared to give relief to the pain and the patient thought it increased the length of the limb. This was doubtful.

FIG. 1.



Osteo-sarcoma of the femur in a boy aged three years and nine months which followed a fracture.

The patient remained under observation in the hospital until July 7th and the swelling diminished in size. After leaving the hospital she attended as an out-patient for about 12 months. At the end of that time she was without pain and walked very well but the swelling had not altogether subsided.

The history of this case—a spontaneous fracture followed by shortening and a tumour—made the suggestion of sarcoma a very plausible one (indeed, the case is so described to this day in the Hospital Reports) and was confirmed by the size of the tumour, which was large. Against this view were the fact that the lower margin of the growth appeared to shade off gradually, so far as could be felt, for the patient was rather fat, and the fact that the fracture had consolidated, whilst the absence of reflexes hinted at another reason for spontaneous fracture—locomotor ataxy. It was decided, therefore, to watch the case and the result proved the wisdom of such a course.

Another case in which there was a history of fracture followed by tumour, deformity, and shortening suggested still more strongly the presence of an osteo-sarcoma. A married woman, aged 51 years, was admitted to Beatrice Ward on Nov. 26th, 1902, for a tumour of the right thigh. (The following is from notes by Mr. C. Thompson.) The history which she first gave was that of a fall during the first week in October; she slipped on some whitewash and was unable to get up again owing to extreme pain in the right thigh. She was taken to the Cottage Hospital of her part and was there treated with a long outside splint for five weeks. When the splint was removed the patient says that the leg was quite straight and that it had become out of shape since. It was ascertained later that she had been wearing a high boot on that side for two years before the accident. She also admitted in cross-examination that she had felt her right thigh bone very distinctly in the upper part during the previous July. There had been occasional pain and swelling in the right knee for four years. On examination of the right lower extremity it was found to be extremely rotated inwards, the inner side of the right knee lying on the bed. There was also some slight adduction of the limb. In the upper and front part of the thigh there was a large prominent swelling which was of bony consistence; Nélaton's line ran through the top of this swelling which gradually shaded into the substance of the femur and this bone appeared thickened almost to the knee. The patient was able to move the limb, but movement was slight and mainly in the direction of flexion; passive movement could be carried out to a similar extent and did not affect the ilium. At the back of the tumour and connected with it was a smooth rounded lump which felt like the head of the femur. The right leg measured 31 inches and the left 33½ inches. The family history was good and she was said to have been always healthy. Menstruation had been profuse every fortnight for the last six years and she said that she had lost a good deal of blood; there had also been an offensive discharge. Dr. W. W. H. Tate kindly examined the patient and reported that the uterus was normal. The head was normal, there was no enlargement to be felt in any other bone, and no tumour could be discovered excepting that of the right thigh. The urine was of specific gravity 1020, was acid, and contained a trace of albumin. An examination with the x rays showed, early in December, that the head of the femur was lying in its normal position and that there had been a fracture of the neck. A skiagram taken on Dec. 12th showed the condition which is illustrated (see Fig. 2), there being great deformity about the upper end of the femur. Skiagrams taken later of the lower end of the femur and upper end of the tibia showed a woolly outline of the bones with evidence of rarefaction of the cancellous tissue.

On Jan. 23rd an exploratory operation was performed in the upper and outer part of the femur. A portion of the bone was removed with the trephine and sent to the Clinical Laboratory, whence report was received that its examination "suggested chronic osteitis." The temperature was normal throughout. Iodide of potassium mixture was given. The patient declined further treatment and left the hospital on Feb. 18th, 1903. The limb was quite useless and extension applied to the leg had produced no apparent effect.

This was then a case of osteitis deformans affecting the femur only, so far as could be ascertained by ordinary examination aided by the history; later the x rays showed the characteristic change in that bone and changes in the tibia also. But at first, as there was no alteration in the skull or elsewhere in the skeleton, the diagnosis was not clear and other things had to be considered. The helpless appearance of the limb, with the history of uterine hæmorrhage and discharge, suggested secondary carcinoma but the more complete history and the result of Dr. Tate's examination negatived this. This history and the x-ray examination made it evident that the primary condition was osteitis deformans, but the statement of recent increase in growth made it advisable to explore in order that all fear of sarcoma might be excluded; so many cases of osteitis deformans have developed a sarcomatous change and ended fatally.

Osteitis deformans rarely affects the femur only (there are usually other bones affected, including the skull) and when it does it leads to tumour of slow growth with shortening in the length of the limb. The tumour shades into the bone above and below, whilst the shortening is slowly progressive yet the patient is not prevented from going about at any time. I exhibited a patient at the Medical Society of London (see Fig. 3) with a tumour due to this disease affecting the left femur, in whom there were two inches shortening and a posterior curve, but this had been gradual and not attended with pain. Mr. A. A. Bowlby has recorded a similar case.

FIG. 2.

Osteitis deformans affecting the right femur in which there had also been fracture.

Quiet necrosis is one of the diseases which may very closely simulate the formation of a sarcoma of the bones and there have been several cases published since attention was drawn to it by Sir James Paget in his clinical lectures. There will have been a history of the formation of a tumour attended with little or no pain, and not only with no signs of suppuration but not even with those of inflammation. Moreover, there may have been a spontaneous fracture. In reading most of the histories of these cases one had not gathered the impression that they were likely to affect a large extent of bone, and that several inches of such a large bone as the femur could not only die but become separated without any of the signs associated with such a necrosis seemed unlikely and difficult of belief.

Some of you may recollect the following case. On Feb. 11th, 1901, a man, aged 21 years, was admitted to Leopold Ward with a tumour of the right thigh. (The following is from notes by Mr. Gibson and Mr. Raby). It was stated that his father had died from consumption but that he had enjoyed good health. He had rheumatism in October and noticed a pain in his right knee; he went to work for a day or two but then became so bad that he went to bed. He was given iodine to paint the knee, but this did it no good and the swelling became larger. There was not much pain at the time of admission and he slept fairly well, but he had become much thinner. The patient was a pale, thin youth, with marked enlargement of the right thigh. The right knee appeared to be swollen but there was no effusion in the joint. Above the joint the skin was normal and the swelling extended for two-thirds of the length of the femur, encircling the bone; it was uniformly hard and fixed. No fluctuation or egg-shell crackling could be felt, but it was thought to be œdematous laterally near the knee. It was slightly tender to the touch, but at no point was this more marked than elsewhere. In circumference the right thigh at its most prominent part (the middle) measured 17½ inches and the left at a similar point 14 inches. The hip- and knee-joints were unaffected. Along the line of Poupart's ligament were several enlarged and hard glands. There was no swelling in the pelvis or sign of secondary growth or abnormal enlargement of the skeleton. The temperature was 100° F. on the night of admission, did not exceed this later, either before or after operation, and was usually normal. The liver margin extended for a distance of one inch below the costal margin, but gave no evidence of disease. The urine was of specific gravity 1020 and was acid. Albumin was present in some quantity. There was no blood. The late Dr. Blacker examined the limb with the x rays and reported as follows: "Right femur shows new bone, apparently periosteal, along the shaft of the bone. No definite sign of new growth from any particular part. ? Sequestrum in centre of shaft, the shadow being rather pronounced." On Feb. 26th a small area of fluctuation was found about four inches above the knee, but without increase of pain or tenderness (Fig. 4).

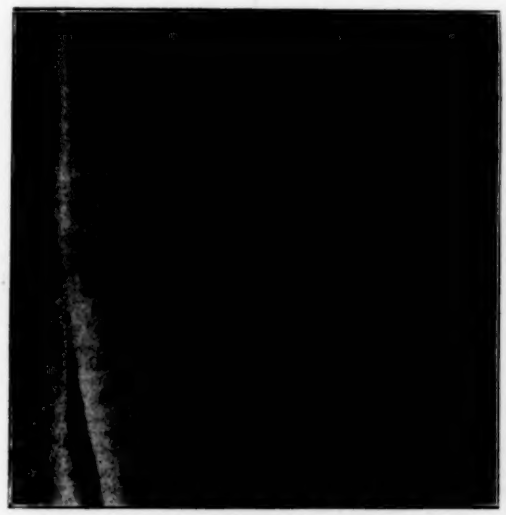
FIG. 3.

Tumour of the thigh produced by osteo-arthritis with posterior excurvation.

On March 8th operation was performed under anæsthesia, an Esmarch's bandage being put high up on the thigh. An incision of six inches in length was made on the outer side above the external condyle. The muscular tissue cut almost like new growth; the bony tissue was vascular, of recent deposit, and when cut through with a chisel was found to inclose a large sequestrum. There were several smaller ones but this one extended for five or six inches upwards

and included nearly the whole of the thickness of the shaft.[1] After extension of the incision and a further enlargement of the opening in the involucrum the sequestrum was removed. There was a considerable amount of granulation tissue surrounding the dead bone, but no pus was seen. During the operation there was a flow of whitish fluid almost

FIG. 4.



Quiet necrosis of femur.

like milk from the area of fluctuation noted on Feb. 26th. The granulation tissue was examined microscopically but showed no sign of any tumour formation or of tubercle.

The sinuses had healed before the patient left the hospital on April 24th, 1901, and the albuminuria was less. When seen some weeks afterwards he was much improved in every respect and had but a slight amount of albumin in the urine.

On admission this swelling resembled very closely that produced by an osteo-sarcoma of the femur. The absence of pain, the large extent of femur involved, a normal temperature, the presence of enlarged glands, the history of loss of flesh, and the anæmic appearance of the boy all pointed to the diagnosis of osteo-sarcoma.

In favour of quiet necrosis was the feel of the upper limit of the growth which was not clearly defined but faded gradually on the femur, and the presence of œdema of the lower part (not noticed by all), and later an area of fluctuation. Œdema of the subcutaneous tissue is in favour of some change of inflammatory character, but a point of fluctuation such as that found might simply indicate a cystic change or local hæmorrhage in the case of a growth. The albuminuria must, I think, be included amongst the evidence in favour of quiet necrosis, for it diminished greatly when the wound had healed and the process of disease had been arrested. I do not think that it has been noticed in quiet necrosis hitherto, but as it may result from dry caries of the spine there appears no reason why it should not follow a dry necrosis of one of the long bones and be, as here, an indication of amyloid change in the kidneys. A normal temperature is given as in favour of sarcoma, but the course of some of the rapidly growing sarcomata is accompanied by fever—100°, 102°, 103·6°—without local signs of inflammation. This must be remembered, for a grave condition is likely immediately to ensue should an incision be made into a sarcoma under the impression that it is an abscess. I recollect one case in which this was done by a medical man before sending his patient to the hospital. The hæmorrhage was so profuse that he thought he must have opened the femoral artery. In that case redness was also present and the only guides were the long history of the case and amount of surrounding growth infiltration.

The examination by the x rays in our patient showed the exact condition; without it we might have been compelled to explore in order to make a diagnosis. Yet, as a small piece of necrosed bone might escape detection by this method, careful exploration should be made before amputation in all cases.

[1] See St. Thomas's Hospital Museum Catalogue.

NOTE ON THE SERUM TREATMENT OF EXOPHTHALMIC GOITRE.

BY GEORGE R. MURRAY, M.A., M.D. CANTAB., F.R.C.P. LOND.,

HEATH PROFESSOR OF COMPARATIVE PATHOLOGY IN THE UNIVERSITY OF DURHAM; PHYSICIAN TO THE ROYAL INFIRMARY, NEWCASTLE.

THE treatment of exophthalmic goitre still leaves much to be desired, for although good results are obtained in many cases by our present methods improvement is often slow and some cases do badly. More especially do we require some efficient means of treating those cases in which the symptoms rapidly become acute and the patient dies within a few days. It has been my misfortune to see several of these cases where the patients have died after a few days of acute illness and it has seemed possible that in this class of case, in which the symptoms are evidently due to a toxæmia, an antitoxic serum might be useful. The evidence we at present possess tends to show that the symptoms of this malady are due to the morbid condition of the thyroid gland and are the result of an excessive formation and absorption of thyroidal secretion. Whether this secretion is simply increased in amount, while it retains the same physiological properties as in health, or is changed in constitution is still an open question which, however, may have an important bearing on the preparation of an antitoxic serum. Assuming, in the absence of proof to the contrary, that the excessive thyroidal secretion has similar physiological properties to that which is formed by the normal gland, there are different ways in which serum treatment might be of service. Thus, a cytotoxic serum prepared in the manner described by Portis might have a specific action in inducing atrophic changes in the redundant secretory epithelium of the enlarged thyroid gland and so diminish its over-activity; or an antitoxic serum might be prepared by Moebius's method or by the method adopted by Lepine and by myself, which would directly neutralise the action of the excess of secretion in the blood. We may regard the symptoms as being due to a toxæmia the source of which is the diseased thyroid gland, just as much as the toxæmia of diphtheria or tetanus is due to the production of toxins in the locally infected area; and although we have no reason to regard Graves's disease as infective in origin I see no good reason why an antitoxic serum should not be obtainable by suitable methods similar to those employed in the case of the infective diseases.

Portis[1] endeavoured to produce symptoms similar to those which follow removal of the thyroid and parathyroid glands in animals by means of specific cytotoxins selective in action on the thyroid and parathyroid cells, causing their degeneration and loss of function. The possibility of this had previously been indicated by the preliminary reports of Mankovsky[2] and of Goutscharukov,[3] both of whom had stated that they had produced thyrotoxic sera, injections of which produced symptoms like those of tetany, the thyroid cells showing evidences of degeneration. Mankovsky introduced the thyroid glands of dogs into the peritoneal cavity of cats at intervals of a fortnight and after the third injection bled the cats and separated the serum which proved toxic to dogs. Goutscharukov also used the thyroids of dogs, injecting them into rams and so produced a serum which he considered to be thyrotoxic. Portis employed increasing doses of an emulsion of dog's thyroid. Beginning with one gland he increased the dose up to ten glands, injecting the emulsion into the peritoneal cavity of a goat, not more than one month being allowed to elapse between

[1] Journal of Infectious Diseases, No. 1, Jan. 2nd, 1904.
[2] Russ. Archiv für Pathologie, 1902, pp. 571–91.
[3] Centralblatt für Allgemeine Pathologie und Pathologische Anatomie, 1902, Band 13, S. 121–24.

the injections. After the third injection he began to bleed the animal for the study of the serum. As a result of his experiments with serum prepared in this manner he came to the conclusion that the serum of goats when injected with suspensions of the thyroid gland or the thyroid colloid of dogs acquired certain new properties. Injected into dogs it caused depression, convulsions, vomiting, rapid breathing, hæmoglobinuria, and early death; in cases which survived longer there were some fever, lacrymation, emaciation, and progressive loss of weight. Microscopical examination of the thyroid gland showed removal of colloid from the acini, desquamation, and disintegration of the epithelial cells, followed later by the development of papillary proliferations. The liver, the spleen, and the kidneys also showed marked degenerative changes. The action of this serum is not solely thyrotoxic as it induces changes in other organs as well, and is therefore not suitable in its present form for use in the treatment of exophthalmic goitre as degenerative changes would probably be set up in other organs as well as in the thyroid gland.

Moebius approached the preparation of an antitoxic serum from another standpoint. He assumed that the blood of an animal after thyroidectomy would contain certain bodies which normally would have been destoyed or neutralised by the thyroid secretion and that they might conversely be employed to neutralise the ill-effects of the excess of thyroid secretion in exophthalmic goitre. Lanz working on similar lines had employed the milk of goats from which the thyroid gland had previously been removed in the treatment of six cases of this disease with good results. Moebius's serum has been prepared by Merck by removing the thyroid gland from a sheep and after several weeks bleeding the animal and separating the serum. Good results have been obtained by Moebius and by Schultes. I have also employed this serum but was unable to attribute any special result to its use.

A more rational method of preparing an antitoxic serum appeared to me to be by treating an animal with gradually increasing doses of thyroid extract so as, if possible, to induce the formation of antibodies in the blood and then to make use of the serum in the treatment of Graves's disease, and this is the method I adopted. Lepine[4] has also prepared a serum in a similar manner. He fed a goat on gradually increasing amounts of the thyroid gland of a sheep or of another goat. Four lobes of sheep's thyroid were given every two or three days. Large doses at first caused diarrhœa, tachycardia, exophthalmos, and dyspnœa. After several months from 20 to 25 lobes of the gland could be tolerated. The serum of this animal when injected into the dog caused loss of weight and slowing of the heart. In the abstract of Lepine's paper which I have seen no mention is made of the results obtained by treating Graves's disease with the serum.

In my own experiments, commenced last year, I endeavoured if possible to obtain an antitoxic serum in as simple a manner as possible for the purposes of practical treatment and so made use of rabbits and fed them with thyroid extract by the mouth. This is easily done by using a hypodermic syringe without a needle and injecting the dose into the rabbit's mouth, when owing to the sweet taste it is readily swallowed. On Oct. 18th five rabbits, varying in weight from 4 pounds 1 ounce to 6 pounds 12 ounces, and one Belgian hare, weighing 7 pounds 13 ounces, were given each ten minims of liquor thyroidei each weekday. On Oct. 25th the Belgian hare aborted and so the treatment was discontinued for a time. On Oct. 31st the daily dose was reduced to five minims as the animals were losing weight on the larger dose. This was continued up to Nov. 20th when the first rabbit was killed by bleeding and the blood was collected with aseptic precautions into two sterilised flasks. These were allowed to stand for 48 hours, after which the serum was decanted into small sterilised glass bottles, 0·2 per cent. of carbolic acid was added, and the glass stoppers were sealed with paraffin. Several batches of serum were prepared in a similar manner, the dose of thyroid extract given and the length of time of administration being varied. It was found that for prolonged administration a dose of five minims three times a week was as much as could be given to a rabbit without causing progressive emaciation. When larger or more frequent doses were given continuously the animals progressively lost weight and even died in two instances. Before employing this serum in the treatment of exophthalmic goitre ten minims of it were injected subcutaneously into a rabbit. No ill-effects followed until three weeks afterwards when the rabbit became ill, the forelimbs were rigidly flexed, the eyes widely opened, and there were general tremors. These symptoms soon disappeared completely and it is doubtful if they were due to the serum injected three weeks previously. The following two cases of exophthalmic goitre were treated with the serum prepared in the manner described above.

[4] Epitome, Brit. Med. Jour., Feb. 22nd, 1904, p. 35.

CASE 1.—A single woman, aged 20 years, was admitted to the Newcastle Royal Infirmary on Dec. 22nd, 1903. Prominence of the eyeballs had first been noticed 18 months previously; six months later the goitre developed. She complained of nervousness, palpitation, and loss of weight. This patient was a typical case of exophthalmic goitre, with well-marked enlargement of the thyroid gland and exophthalmos, Stellwag's and von Graefe's symptoms both being present. The pulse was 120, the skin was moist, and fine tremors were present. After she had been in the hospital for a fortnight the pulse was found to vary between 96 and 124. Serum treatment was commenced on Jan. 9th, 1904, five minims being given by the mouth each night. On Jan. 12th this dose was given three times a day. On the 15th the dose was increased to seven minims and on the 22nd to ten minims. After this seven minims were given (with the exception of four days) thrice daily up to Feb. 8th, when it was stopped. After this electrical treatment was given for a fortnight. From Feb. 23rd to March 9th Moebius's antithyroid serum prepared by Merck was given in five-minim doses thrice daily. While taking my serum the patient gained in weight, the tremor diminished, the breathlessness disappeared, and the exophthalmos became less marked. She also continued to improve under the influence of the electrical and Moebius's serum treatment. In this case, however, the improvement was nothing more than what frequently takes place in a patient at rest in a hospital ward on the ordinary medicinal treatment and I was unable to trace any special effect to either of the two sera employed.

CASE 2.—In this case of exophthalmic goitre of five and a half years' duration in a single woman, aged 19 years, the serum was given for three weeks in similar doses. The pulse diminished in frequency somewhat but no special effect could be attributed to the serum in this case either.

Although no very definite results have been obtained in these cases I think it is quite possible that if larger animals were employed and larger doses of thyroid extract were given a serum might be obtained which could be used for hypodermic injection in acute cases or for administration by the mouth in chronic cases where prolonged treatment would be required, and for this reason I have thought it advisable to record the above observations.

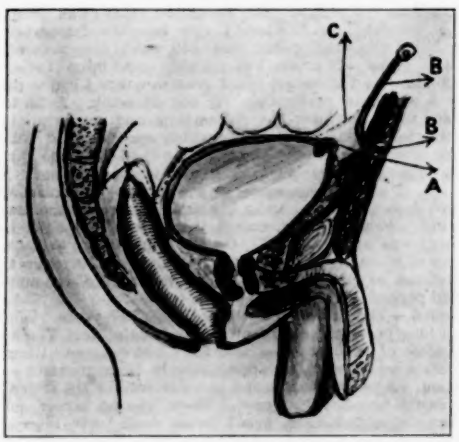
Newcastle.

THE RADICAL CURE OF PATENT URACHUS (URACHAL URINARY FISTULA).

BY B. CROSSFIELD STEVENS, M.D., M.S. DURH., F.R.C.S. EDIN.

SUCH an operation as the one described below does not appear to be included in the present works on operative surgery. Most of the operations on the urachus deal with the umbilical end alone and neglect the vesical end. Cures are attempted by obliterating the umbilical opening by caustics or cautery; these measures may close the fistula at the umbilical end but leave a patent tract lower down or a urachal retention cyst. Such a condition does not free the patient from the pain which is so constant on attempting micturition, especially when the bladder is full, for this increases the pressure in the urachus which bears to the bladder the same relation as a pressure-gauge to a boiler. After seeing a tall, strong youth who had borne this distressing condition for 17 years it struck me that something radical might be done to relieve him. The umbilicus was bulged forwards and, in fact, was a small hernia of subperitoneal fat, the skin was in an eczematous condition from the continual acid moisture, and the whole area was very tender. The patient always experienced considerable pain when he voided urine from the back pressure effects mentioned above.

The operation which suggested itself was as follows. Under an anæsthetic the bladder was emptied and injected with four ounces of boric lotion; a transverse incision was made across the hypogastrium one inch above the symphysis pubis; this incision enabled one to get a more extensive view of the bladder. The recti were separated in the middle line and retracted and a good view of the bladder was obtained. The urachus was then sought for, but the left obliterated hypogastric artery came into view as it seemed somewhat anteriorly placed. On prolonging the separation of the recti upwards the peritoneal reflexion was well displayed with the omentum and small intestine below it. By working the finger up between the fascia transversalis and the peritoneum the fibrous structure of the urachus could be felt lying on the lower plane and deep, not just under the abdominal wall as one is apt to imagine. The urachus, which was of the size of a clay-pipe stem, was seized and bared to the extent of one and a half inches. The part quite close to the bladder was clamped, while another clamp was applied one inch higher up. The part between was divided and the two ends were touched with pure carbolic acid and ligatured with catgut. A purse-string suture of celluloid thread was then made round the vesical stump of the urachus, going through the muscular coats of the bladder but avoiding the mucous. The stump of the urachus was now invaginated into the bladder and the purse-string was drawn tight, just as the appendix stump is buried in the cæcum after appendicectomy. The umbilical end of the urachus was brought



Mesial section showing the appearance of the urachus after the radical operation. The visceral end (A) having been ligatured and cauterised is invaginated through the vesical wall, the wall being closed over the stump by a purse-string suture of celluloid thread. The umbilical end (B), also ligatured and cauterised, is brought through the recti muscles and fixed under the superficial structures of the abdominal wall. The peritoneum (C) is unopened.

up outside the abdomen and through the split recti and anchored there to the muscle and sheath and left under the skin and fascia only, so that both ends were treated extraperitoneally on account of the eczematous condition at the umbilicus. The wound was then closed in the ordinary way and the patient was put to bed with a catheter passed per urethram. The catheter was removed after 48 hours and the bladder allowed to act spontaneously, which it did painlessly and without leaking. Recovery was uneventful and the patient went home in a fortnight much better. The excoriation about the umbilicus still persisted for several weeks but is now much better (three months after the operation).

This obstinacy is no doubt due to the secretive activity of the squamo-cubical epithelium of the mucous lining of the upper end of the urachus. Should any difficulty remain in this part one should either resect the remainder of the tube or destroy its lumen with escharotics. The hypertrophy of the urachus from increased work is noteworthy when one compares it with the shred left in a normal person when the allantois has undergone its normal embryonic changes.

Lancaster.

NOTES ON A SERIES OF OPERATIONS FOR THE ACCIDENTS AND COMPLICATIONS OF GASTRIC ULCER.

BY G. REINHARDT ANDERSON, F.R.C.S. ENG.,
HONORARY MEDICAL OFFICER TO THE SOUTHPORT INFIRMARY.

THE accidents and complications of gastric ulcer prove a fruitful theme in the columns of modern medical literature. Since the time, not so long ago, when the successful treatment of a perforated gastric ulcer (one of the direst accidents that can befall a human being) was heralded as a great surgical triumph, many cases have been recorded. It has become an axiom that the early recognition and prompt treatment of this accident afford a great prospect of success. There is no patient so afflicted but should have a chance given him; no practitioner if placed in circumstances of extremity but should be capable of giving relief in such an emergency as early as he would were it a case of strangulated hernia. So I am prompted, writing as a general practitioner, to give briefly the results of the cases that I have treated in the past five years. Undoubtedly many cases of sudden severe abdominal pain with concomitant symptoms (involving the rupture of a gastric ulcer) are overlooked and thereby lost because there lies at hand the ready hypodermic syringe, the delusive soothing of morphine with the consequent and often fatal delay—a temptation that readily assails the practitioner, as, indeed, it did with me in my last case where, with few symptoms, a patient reluctant to undergo an operation, and a midnight hour, I was sorely tempted to give morphine a trial and see how things looked in the morning. Fortunately I resisted the temptation with the results to be shown below in the first case recorded. In these cases it is most necessary—if once assured of our diagnosis—to urge immediate operation, for experience again and again proves that our chances of success are immeasurably greater if the operation is undertaken soon after the perforation. It is the early recognition of the severity of the case that I would urge as all-important, for so many cases coming into hospital are moribund or nearly so. These remarks refer especially to the sudden rupture of a gastric ulcer with its inevitably fatal result if unrelieved. In regard to the complications of gastric ulcer the way may be not so clear or so easy. In this class we meet with cases either of intractable dyspepsia or constant emesis or chronic hæmorrhage with many allied conditions the outcome of long existing gastric ulceration. The medical treatment of these cases often proves to be entirely unsatisfactory and we are faced with the difficulty what to do to relieve them. In a large majority a posterior gastro-enterostomy holds out the prospect of renewed health and comfort, and it may be offered to a patient with rapidly diminishing risks. It is no part of my intention to enter into a detailed examination of the conditions in which this operation may be indicated, nor to describe its technique, but in my own experience I have come to recognise six cardinal points as being essential in its performance: (1) the site of junction—namely, the posterior aspect of the stomach as opposed to the anterior whenever possible and in but few cases is it impossible to effect a posterior junction; (2) shortness of the loop of bowel as measured from the duodeno-jejunal angle; (3) the obliquity of the incision into the stomach—namely, from below upwards; (4) approximation as near as possible to the greater curvature; (5) removal of superfluous gastric and intestinal mucous membrane; and (6) immediate suturing with fine silk by an inner and outer layer together with the use of clamps during the process of suturing. These points, I know, have been urged by others, and my experience convinces me that they are essential.

In my earlier cases regurgitant vomiting was not unknown, but since following these points during the past 18 months not one of my patients has had regurgitant vomiting. To me the shortening of the loop seems all-important. In the after-treatment I lay special stress upon the importance of pillowing the patient up in a semi-recumbent position as soon as the anæsthetic sickness has passed off and the wisdom of early judicious feeding. Bearing these points in mind and having regard to a selection of cases, excluding those in whom disease has reduced the bodily powers so much as to

impair the prospect of union, I believe we may confidently offer to our patients by this operation great relief from their sufferings and a measure of health undreamt of before. I will first turn to the consideration of the cases of perforated gastric ulcer.

CASE 1. *Perforated gastric ulcer, occurring twice in a year, the second operation accompanied by gastro-enterostomy.*—The patient was a female, aged 22 years. The first perforation occurred on May 17th, 1903. There was a history of gastric pain and vomiting over several years. She had been under my care for the previous 12 months. On the afternoon of May 17th whilst asleep in a chair somebody entered the room hastily and gave her a fright. This was immediately followed by sudden acute pain in the abdomen. She was first seen at 5 P.M.; the pulse was rapid, the temperature was 100° F., the expression was anxious, and every movement gave pain. She complained bitterly of pain in the left shoulder tip (a symptom that I have found not uncommon in these cases), the abdomen was distended, and the liver dulness was lost. I diagnosed a perforated gastric ulcer. She was removed to the infirmary and I operated at 8.45 P.M., four and a half hours after the perforation. An ulcer was found on the anterior wall of the stomach. There was little or no extravasation of the stomach contents into the peritoneal cavity. I excised the ulcer and the resulting wound in the stomach was secured by two layers of silk stitches. The peritoneum was freely douched with hot saline solution, and no drain was used. Recovery proved uneventful. She left the infirmary in a month. Progress for six months was satisfactory; she had no pain after eating and remained in the best of health. I saw her again at the beginning of this year, because she was complaining of pain under the tip of the left ninth rib, which she described as of a dragging character. It was not aggravated by food. I suspected an adhesion resulting from the operation and advised rest in bed, great care with diet, and, if no relief resulted, to have the abdomen opened to investigate the cause. The patient was not seen again until May 29th, 1904. She had been off and on well since my last visit in February, sometimes free from pain and at others suffering severely, but it now had relation to food. She stayed in bed on May 25th and 26th for this same pain, but on the 27th and 28th she had been better and freer from pain than at any time since the operation. During the afternoon of the 29th she played croquet and afterwards ate a full tea of ham and eggs, and subsequently went for a walk. At 9.15 P.M. or thereabouts she had a drink of milk and soon after complained of severe abdominal pain whilst walking in the street. This was so bad that she had to get a cab to take her home. I first saw her at 11 P.M. and found the abdomen not very distended, but acutely tender to palpation, more especially over the left hypogastric region and in the epigastrium. The liver dulness was slightly diminished, and there was much rigidity of the abdominal muscles. She had vomited and was constantly making slight attempts at regurgitation which brought on severe pain. She could not micturate although there was a constant desire so to do. The pulse was 132, respiration was almost entirely thoracic, the tongue was furred, the breath was offensive, and the temperature was 100·4°. I suspected perforation, although the symptoms were so vague, and strongly urged an exploratory operation. It was now that she begged for morphine and wished me to leave her till the morning, but I absolutely declined. Hence some delay took place and it was not until 1.45 A.M. on the 30th that I was able to operate—four hours after the perforation.

On opening the abdominal cavity many firm adhesions were encountered binding the stomach to the abdominal walls and to the liver; great difficulty was experienced in separating the stomach and when this was done the position of the old ulcer was easily made out, quite obliterated, but in the stomach wall in this position I could feel the silk that had been used in the previous operation. The stomach itself was very much congested. No free gas escaped from the abdominal cavity and there was not much evidence of soiling beyond stray flakes of lymph, so that I doubted at first whether a perforation had occurred, but on gently drawing the stomach into the wound a fresh ulcer fully four and a half inches from the site of the previous perforation came into view with a minute perforation in its centre. The ulcer was close to the lesser curvature and from its proximity to the œsophagus difficult of access. It was of about the size of half a crown, very cartilaginous, and the margins of the perforation were hæmorrhagic in appearance. I found it quite impossible to excise, so closure was effected after some difficulty by two layers of fine silk sutures and a piece of omentum was anchored over the site to give additional security. I determined, in view of her good condition at this stage of the operation, the absence of any severe peritonitis, and to prevent the possibility of recurrence, to perform an immediate posterior gastro-enterostomy. This I did as quickly as possible. Subsequently I douched out the peritoneal cavity with large quantities of hot saline solution, a great deal of which being left in, the abdomen was closed in the usual way. No drain was used. She stood the operation very well and her subsequent progress proved uneventful. There was no regurgitant vomiting; in fact, she has never vomited since the operation. She left the hospital in a month. Her present condition is one of gradually improving health.

CASE 2.—The patient was a female, aged 21 years, having a previous history of gastric trouble. Perforation occurred three hours after a hearty meal. The operation was performed two and three-quarter hours afterwards. I discovered a small perforation on the anterior surface which was easily sutured. Lavage was used but no drain. She made an uninterrupted recovery except for some effusion into the left pleura which subsided without tapping.

CASE 3.—The patient was a female, aged 24 years. There was a vague history of previous gastric disorders. The symptoms commenced three days before she came under my care. She had had violent abdominal pains and vomiting, but as she continued to eat heartily till within 24 hours of admission this was hardly to be wondered at. When I saw her the temperature was 101·2° F., the pulse was 140, and she presented all the signs of acute appendicitis. A large incision was made over the cæcum but I soon saw that I had to deal with a subacute perforation of the stomach. A further incision was made over the epigastrium and my examining finger entered an irregular cavity which was bounded below by the pylorus, externally and above by the lesser lobe of the liver. From this stomach contents were escaping. No attempt at closure was made or was possible. Gauze was packed into the cavity and a big drain was put in the lower opening. Strange to say, except that it was prolonged her recovery was uninterrupted. On the fourth day I extracted a piece of bacon from the upper wound, proving at once the correctness of my diagnosis and the tolerance of the much-abused peritoneum.

CASE 4.—The patient was a female, aged 17 years. There was a long previous history of stomach pain, &c. The first symptoms of pain occurred two days before acute illness. Operation was performed approximately 14 hours after perforation. A perforation on the anterior wall of the stomach was easily found and sutured. There was no lavage, only systematic mopping. A small gauze drain was inserted. Recovery ensued without a bad symptom. Her temperature was 101·2° F. before the operation and the pulse was 122. In three days the temperature was normal and the pulse was 88.

CASE 5.—The patient was a female, aged 23 years. We have very little history of this case. She was admitted to the infirmary 20 hours after perforation in a moribund condition. Operation was performed 23 hours after perforation. On opening the abdomen the peritoneal cavity was literally awash with dark brown fluid. The perforation was close to the pylorus and very difficult to suture. Every attempt was made to cleanse the peritoneum by lavage and a suprapubic drain was used. She died seven hours after the operation.

CASE 6.—The patient was a woman, aged 38 years. This is one of the most interesting and instructive cases that I have seen and is the record of a success and a failure. She was a weakly woman, the mother of ten children, and with a history of gastric ulceration extending over many years. On the morning of Dec. 14th, 1902, in the act of micturition she was suddenly seized with acute pain in the left groin and over the bladder, so severe that she nearly fainted and had to have brandy. I saw her at 3 P.M.; she then presented the following curious train of symptoms. There was a left femoral hernia which was quite recent but which I was able to reduce without difficulty. The abdomen was not distended nor hard; it was exquisitely tender over the epigastric region but she persisted that the chief seat of her trouble was in the bladder. The liver dulness was unaltered and there was no free fluid in the flanks. Her

tongue was only moderately furred, there was no vomiting, and the temperature was 100·4° F., but her pulse was thin and rapid at 128. In spite of these vague symptoms I decided to operate and did so eight hours after perforation. On opening the abdomen I found on the anterior surface in the outer third a large indurated gastric ulcer of about the size of a five-shilling piece with a tiny perforation right in the centre of it. I had to excise the ulcer and then brought the big gaping wound together in the usual way, the final fold in the vertical axis being quite four inches long. Lavage was used and a suprapubic drain. All went well for five days when she began to get true regurgitant vomiting. We tried all possible means to stop it by syphonage, &c., but ineffectually. So on the evening of the seventh day, recognising that she must have pyloric obstruction, I reopened the abdomen to find that the site of my previous operation was almost obliterated, so complete was the healing. But what I did find was a very marked hour-glass state of the stomach. The communication between the two compartments only admitted my little finger. This contraction was evidently due to very long-standing ulceration. I therefore rapidly performed a posterior gastro-enterostomy. Unfortunately she died from shock in eight hours. My great regret is that I did not discover the whole extent of the stomach mischief at the first operation when, if I had done the two things at the same time, I believe she might have had a better chance.

CASE 7.—The patient was a female, aged 24 years. With regard to her previous history, for some months she had suffered from pain after food and vomiting and her general health had been suffering. She had partaken of a hearty dinner on May 29th, 1903, and during the afternoon had walked a distance of some three miles, when she was suddenly seized with abdominal pain. In spite of its severity she managed to walk home and I was not summoned to see her until 8.15 P.M. On my arrival I found her in intense agony with distended abdomen, constant vomiting, rapid pulse, and slightly elevated temperature. I had no difficulty in arriving at the conclusion that she was suffering from perforated gastric ulcer and advised her removal to the Infirmary. The operation took place at 10.15 P.M.—about six and a quarter hours after the perforation. On opening the abdomen there was a free escape of gas; there was intense peritonitis due to the escape of gastric contents from a large perforation on the anterior wall of the stomach. The ulcer was excised and the stomach sutured with two layers of silk and over the seat of the wound a portion of omentum was anchored. Very careful and systematic douching of the peritoneal cavity was used, followed by mopping in all available pouches. From the extensive soiling of the peritoneum that had occurred I deemed it wise to employ a suprapubic drain and I also passed a large gauze drain down to the site of the wound in the stomach. For 14 days her progress was uneventful. There was considerable oozing from the pubic drain and also along the track formed by the gauze in the upper abdominal wound, but this gradually ceased and by June 12th both abdominal wounds were soundly healed. On the morning of the 12th she complained of not feeling so well, with a pain in the left axillary region. Examination revealed friction and some dulness over the left base posteriorly. Early in the morning of the next day she had a rigor and the temperature rose to 103·4° F. Aspiration of the pleura revealed nothing although I quite believed an empyema was forming. The rigors were repeated on several days and the temperature remained very irregular but the pulse was not markedly accelerated nor were her constitutional symptoms bad. Events progressed much in the same condition until the 30th when she had another slight rigor and again the aspirator was used, and by plunging the needle deeply in between the ninth and tenth ribs I came upon pus. That afternoon I resected a portion of the ninth rib and on opening the pleura I was disappointed not to find pus. It seemed I had to deal with a subphrenic abscess, so I merely contented myself at this time with stitching the pleura together with a view to opening the deep-seated abscess on a subsequent day. On July 3rd I attempted to find the pus by incising the diaphragm but again my search was fruitless. Therefore I proceeded to make a long curvilinear incision below the ribs and fully exposed the posterior surface of the spleen. This was firmly adherent in all directions and I presume the friction heard was caused by peritonitis localised in this position. With my finger I separated the spleen as far as possible but came upon no abscess. Despairing of finding the abscess by these double posterior incisions I reopened the abdominal wound in the middle line. Apparently everything was perfectly normal; the stomach was quite healed; there was no general peritonitis and I am sorry to say I could in no wise localise the small abscess wherever it was. From this time forward she steadily went downhill. She was seen by Dr. G. Newton Pitt and by Dr. Julius Dreschfeld on more than one occasion. Many attempts were made with aspirating needles to find the pus but all without avail. The physical signs over the base of the left lung were most deceptive. Consolidation with increased voice sounds and amphoric breathing led one to think that a pulmonary abscess was in process of formation, but no evidence of this could possibly be found, the general opinion being that an abscess had formed in the lesser sac but was impossible of access. Palpation of the abdomen gave no pain and it was free from any dull area. From the beginning of August, however, her general symptoms seemed to improve and the temperature began to fall, so that from the 9th to the 12th it was rarely above 100°, but on the 13th it went up to 105°. Her condition became most alarming. Feeling matters were in a desperate state I once again used the aspirating needle, pushing it deeply in between the ninth and tenth ribs. At last I came upon the pus which I had so often sought for ineffectually. Leaving the needle in as a guide I reopened the old wound in the pleura and, following the needle, I came upon a ragged opening in the diaphragm through which offensive pus was escaping. I put in a big tube. Unfortunately the patient died 24 hours after the operation, two and a half months after the original perforation of her stomach.

No post-mortem examination was allowed but the final operation revealed sufficiently the regrettable conditions which led to her death—namely, the slow formation of subphrenic abscess. Possibly the pus which I drew off at the first aspiration emptied the small loculus, so that it became increasingly difficult—nay, impossible—to find it again, as witnessed by the many unsuccessful attempts which were made to reach it both by the aspirating needle and digital exploration. I have no doubt that the fatal catastrophe was brought about by the subphrenic abscess bursting into the pleura and causing a rapid septic invasion.

The consideration of this case opens up that debateable question in treatment—whether douching or simple mopping is the better method of cleansing the peritoneum. For myself, I think that every case needs to be treated on its own merits. Where there has been, as in the above case, copious exit of stomach contents aggravated by walking fully three miles it seems to me that nothing short of lavage followed by mopping would do good. But there is no doubt that free drainage is all-essential and if a drain in the left lumbar region had been used as well as one over the pubes the result might have been different.

The following is an abstract of the cases that I have operated upon for some of the complications of chronic gastric ulcer.

CASE 1.—A married woman, aged 54 years, was admitted under my care to the Southport Infirmary on Oct. 26th, 1901. There was a history of chronic gastric troubles extending from Christmas, 1897, to the present time. She suffered from severe pain after food with constant vomiting, which at times was of a coffee-brown colour and then very copious. She had been treated in several institutions for the same complaint and whilst she improved under treatment, with the resumption of her work her symptoms rapidly recurred. She had been under my care during 1900, but had now completely relapsed. After two months' stay in the infirmary she consented to operation and accordingly on Dec. 11th, 1901, a posterior gastro-enterostomy was performed. A bone bobbin was used. The stomach presented all the appearance due to chronic ulceration. The anterior wall was much thickened near the pylorus, the veins were enormously distended, and there were several enlarged but discrete glands along the lesser curvature. All went well for 11 days when she had a most severe attack of regurgitant vomiting. Her condition suddenly became most alarming. She vomited six quarts of bilious fluid in 12 hours. All feeding by the stomach was stopped and it was washed out every three or four hours. By these measures the difficulty was overcome and on Dec. 29th stomach feeding was resumed. Her further progress was uneventful and she left the infirmary on Jan. 14th, 1902, better than she had been for years. I have

recently heard from her. She is in good health, is able to do her work, is free from pain, and has gained flesh.

CASE 2.—The patient was a man, aged 67 years, who was admitted on August 6th, 1902. His complaint was of constant gastric pain, incessant vomiting, and loss of flesh. Examination revealed a painful area over the pyloric region but no lump could be felt. There was much dilatation of the stomach with subacidity. His urine was free from albumin and sugar but of low specific gravity. His sufferings were so acute that he readily consented to an exploratory laparotomy with a view of performing gastro-enterostomy or otherwise as circumstances might direct. At the operation the pylorus was found to be stenosed considerably and the stomach was very much dilated. A posterior gastro-enterostomy was performed and a bone bobbin was used. As far as the immediate operation was concerned he did very well. Within a fortnight he was eating semi-solid food heartily and without pain. He also began to put on flesh. On the twenty-fourth day after the operation regurgitant vomiting commenced and in spite of all measures adopted this persisted until his death which took place about five weeks after the operation. At the post-mortem examination the kidneys were found to be contracted and granular and I inclined to the view that this condition determined the fatal issue, but at the same time this is open to discussion. The probable explanation from examination of the stomach and bowel is that the loop from the duodeno-jejunal angle was too long. It was the failure in this case that directed my attention so strongly to the importance of making a short loop. At the same time I believe fatal regurgitant vomiting commences much earlier than was the case in this patient. He refused any further operation, otherwise I intended to reopen the abdomen to perform a lateral anastomosis between the two limbs of the loop.

CASE 3.—This case I have referred to above (Case 6). It was a complementary operation to the accident of perforation and the patient died within eight hours of performing the same.

CASE 4.—A woman, aged 28 years, was admitted under my care on Dec. 29th, 1902, and gave a very long history of gastric trouble. She had been in St. Thomas's Hospital under the care of Dr. W. M. Ord so far back as 1891. During the early part of 1901 she was admitted to the Southport Infirmary for hæmatemesis and was discharged relieved after a stay of 15 weeks. Hæmatemesis recurred on Dec. 25th, 1902, and for this she again sought admission. From the constant pain and vomiting she was so reduced that I deemed it best to keep her under observation for six weeks, and under treatment she slowly improved. Operation was performed on Feb. 11th, 1903. There were well-marked hour-glass condition of the stomach and also some stenosis of the pylorus. Posterior gastro-enterostomy was performed with simple suturing and no bone bobbin was used. She made a speedy and good recovery with subsequent absence of pain after eating and a great improvement in general health.

CASE 5.—A man, aged 57 years, was admitted under my care on Oct. 24th, 1903. For 12 years he had been suffering from pain after food. Nine years previously he had severe hæmatemesis. For the past seven years he had made it a practice to wash out his stomach almost every day. A diagnosis of pyloric obstruction was made. On Nov. 7th I operated and found the pylorus so contracted that it would not even admit a small probe. A posterior gastro-enterostomy was performed. There was no regurgitant vomiting and his recovery was uneventful except for the fact that he suffered from troublesome diarrhœa. This I think was to be attributed to the fact that the intestines were unprepared for the sudden demands made upon them when he commenced to take ordinary food with freedom and comfort. He has gained nearly a stone in weight since the operation.

CASE 6.—The patient was a female, aged 28 years. There was a very long history of stomach trouble, vomiting, and hæmatemesis. She had been treated in several infirmaries without more than temporary relief. Operation was performed on Jan. 20th. Numerous adhesions were found binding down the pylorus. There was a large ulcer involving the anterior wall of the stomach. This was adhering to the anterior abdominal walls, leading one to believe that on some previous occasion a perforation had taken place. A posterior gastro-enterostomy was performed and her recovery was rapid. There was no regurgitant vomiting. Before the operation she weighed under six stones and by April 16th, 1904, her weight had risen to 7 stones 6 pounds.

CASE 7.—A woman, aged 42 years, was admitted under my care on Feb. 25th, 1904. She was a fragile little woman suffering from rheumatoid arthritis. She had suffered also from considerable gastric pain and vomiting for many months and in spite of treatment obtained no relief. The operation was performed on March 16th. There was a well-marked hour-glass contraction of the stomach with a large chronic ulcer on the anterior wall and numerous adhesions to the liver and abdominal walls. A posterior gastro-enterostomy was performed and her recovery was uneventful. Her general health improved considerably and she left the infirmary on May 14th for a convalescent home.

CASE 8.—A woman, aged 49 years, was admitted under my care on April 4th, 1904. Her history of pain, vomiting, and hæmatemesis extended over a period of 20 years. With regard to her present condition, she was a pallid woman emaciated to a degree, complaining of great abdominal pain which was aggravated after taking food. There was marked rigidity of the abdominal walls and a sense of fulness and resistance was felt over the epigastrium. Operation was performed on May 5th. I found a large cartilaginous ulcer involving almost the whole of the anterior wall of the stomach. Its diameter was fully five inches and on invaginating the stomach wall the finger came upon a depression in the ulcer which seemed fully three-quarters of an inch deep. There were so many adhesions that the performance of a posterior gastro-enterostomy was exceedingly difficult, but union was successfully effected and her recovery was uneventful. There was no regurgitant vomiting. The patient left the infirmary on June 2nd for a convalescent home. I saw her again on June 20th. Her weight, which before the operation was 6 stones 4½ pounds, was now 6 stones 9 pounds. She was taking her food freely and without pain and the marked pallor of her face was greatly improved.

CASE 9.—The patient was a woman, aged 47 years. She had suffered from dyspepsia and gastric trouble since 14 years of age. From the Christmas of 1903 she had been considerably worse; the pain was not only in the epigastrium but also in the left hypochondrium. This was so severe that it had to be relieved by morphine but food often gave temporary relief. Vomiting was not a marked symptom. Dr. Dreschfeld saw her with me and confirmed the diagnosis of chronic gastric ulcer and strongly urged operation which took place on March 17th, 1904. There was well-marked hour-glass stomach which had dense adhesions to the neighbouring organs, particularly one which went downwards and forwards to be attached to the gastro-colic omentum, probably causing the dragging pain she so frequently complained of in that region. Posterior gastro-enterostomy was effected with some difficulty as there were so many adhesions. Her subsequent progress was uneventful. There was no regurgitant vomiting. She has gained over a stone in weight since April 20th.

CASE 10.—The last occasion on which I had the opportunity of performing a gastro-enterostomy is the one noted above (Case 1) who had suffered from double perforation.

I am well aware that a series of ten cases is too limited to draw any final conclusions from but they are a small contribution to the mass of evidence that is accumulating as to the benefits to be derived from the performance of a posterior gastro-enterostomy in judiciously selected cases.

Southport.

A CASE OF ACUTE DIABETES INSIPIDUS WITH FATAL COMA.

BY ALFRED H. CARTER, M.D. LOND., F.R.C.P. LOND.,
SENIOR PHYSICIAN TO QUEEN'S HOSPITAL, BIRMINGHAM; PROFESSOR OF MEDICINE, UNIVERSITY OF BIRMINGHAM.

THE following case is worthy of being put upon record owing to its rarity. The notes are unavoidably brief as I only saw the case once in consultation and no post-mortem examination was obtainable.

On July 11th last I was called to see a little girl, aged eight years, with Mr. A. E. Hancock of Saltley. The child was reported as being of a nervous and excitable temperament, but, apart from the presence of threadworms in the stools (to which the mother attached no importance and adopted no treatment), she was considered to be in good

health until June 25th. On that day she went to a school-treat, to which she was eagerly looking forward and over which she was very excited. The day was showery, but the child does not appear to have got wet, nor did she eat anything beyond a moderate amount of bread-and-butter and plain cake. On the next morning she complained of being unwell, but with no definite symptoms. On the following day she seemed to be better but from that time forward she became very thirsty, was always drinking water, and passed large quantities of pale urine. The amount was not measured but was said to be at least from six to eight pints in the 24 hours. Sleep was disturbed owing to the frequent calls to pass urine but otherwise the child complained of nothing, her appetite was good, and she had no pain. The mother, thinking that the child's thirst was due to the hot weather, did not seek medical advice. Then the appetite gradually failed, the child became pale, lost flesh, and the skin became very dry. The diuresis continued as before. On July 10th she complained of pain in the stomach and vomited and Mr. Hancock was called in. He prescribed diluted milk and a mixture containing liquor bismuthi citratis and morphine ($\frac{1}{8}$ grain for a dose). On the following day the child was better. The vomiting had stopped but there was still some uneasiness in the epigastrium. I saw the child on that evening and found her drowsy but easily roused. Her temperature was subnormal. She was reported to have "wandered" from time to time in her sleep. She had only taken about a pint of milk-and-water that day and the amount of urine had fallen to a corresponding extent. The respirations were deep, and were 24 per minute. There was no cough. The pupils were moderately dilated. Beyond the dryness of the skin and emaciation, no morbid physical signs were observed. The urine (from a sample recently passed) was examined; it was of specific gravity 1018 and pale; there was a trace of albumin but no sugar. Half a pint of hot normal saline fluid was ordered to be injected into the bowel and repeated every four hours. On the next morning I heard that the saline injections had been retained and that the child had taken rather more nourishment, but was more drowsy and her breathing was more rapid and panting. Nothing was found on examination of her chest. As the bowels were confined a dose of castor oil was suggested. The next thing I heard was that the child had steadily become worse and died in the afternoon of July 13th.

Mr. Hancock has since sent me the following note: "The child never spoke after you saw her; the comatose condition increased, the amount of nourishment taken was much less, but was taken and swallowed up to ten hours before death. The amount of urine passed from the time you saw her until death was about one-third of an ordinary chamber-potful. The specific gravity was 1010, reaction slightly alkaline, of a very pale colour with a slightly greenish tinge, no blood, no sugar, and a very slight trace of albumin. The microscope revealed nothing. The rectal injections were retained. The pulse became feeble and compressible. About one hour before death it was 90 per minute. The respirations increased in frequency, became sighing, and numbered about 40 per minute. The frequency of breathing varied considerably from time to time. The temperature never rose above normal. Half an hour before death the conjunctivæ were insensible. The castor oil was given but had not acted before death." The condition was obviously closely allied to, if not identical with, the so-called Küssmaul's coma in diabetes mellitus.

Birmingham.

A METHOD OF HYSTERECTOMY.

BY JOHN O'CONOR, M.A., M.D. DUB.,
SENIOR MEDICAL OFFICER, BRITISH HOSPITAL, BUENOS AYRES.

As a general surgeon I feel some diffidence in intruding on the preserves of my gynæcological colleagues by inviting attention to a method of removing the womb which I have found both simple and efficacious. I do not presume to claim any originality for the procedure, as its simplicity dictates the conclusion that if the surgeon in the Ark performed abdominal hysterectomy in all probability he adopted some similar plan. However, as I do not remember to have seen the method described I may venture to publish it, and before doing so I wish to acknowledge my indebtedness for ideas to Freyer's operation of prostatectomy and O'Sullivan's cervical forceps.

The patient is prepared for a few days by rest in bed, light dietary, and mild purgation. The vagina is irrigated twice daily with acid mercurial lotion (1 in 2000) and a warm mercurial sitz bath is given each evening. The night previous to operation the skin of the abdomen is carefully cleansed and a mercurial moist dressing applied. On the morning of operation the charge nurse gives the vagina a final irrigation, the bladder having been previously emptied. Chloroform having been administered the patient is placed for a few moments in the lithotomy position. A nurse introduces two Simon's specula, I seize the cervix with a strong Muzeux forceps, and with a large curved scissors rapidly divide the vaginal mucous membrane freely all round above the grasp of the forceps. The nurse then removes the specula; without having touched the parts with my hands I cast the scissors aside, and the forceps is left in position.

The patient is then placed in the supine position, the dressing is removed, and the skin is finally washed with alcoholic mercurial lotion. As I usually operate with two assistants I may mention that up to this stage they have not taken any part in the procedure. Sterilised mercurial towels are placed around the field and fixed in position by four of Mr. Arbuthnot Lane's most useful tissue forceps. The abdomen is then opened, the womb differentiated, and the peritoneal cavity packed off with large Turkey sponges. I now direct a nurse (not one of my two assistants) to pass her hand up between the patient's legs, under cover of the sterilised towel, grasp the Muzeux forceps, and push firmly upwards. The result of this simple manœuvre is practically to render the operation of hysterectomy a superficial business, and obviate in a large percentage of cases the necessity for the Trendelenburg position, which ought to be avoided as much as possible, as I have on several occasions seen considerable shock follow its adoption. This can only be accounted for by the huddling upwards of the abdominal contents. A successful issue often depends on a dry pelvis, and I am unable to follow the reasoning of some continental surgeons who leave shed blood to be absorbed by the peritoneum.

The vesical peritoneal reflection is next divided transverely and the bladder is freely separated from the uterus. The womb is then pulled well forwards by an assistant while I transversely divide and free the peritoneum on the posterior surface as low down as seems convenient. The ovarian and the round ligament segments of the broad ligaments are ligated and divided, then an assistant draws the womb to one side and the nurse is now told to push up the forceps firmly, while I divide the remaining portion of the broad ligaments close to the uterus until I expose the head of the Muzeux forceps. As each branch of the uterine artery is divided it is seized with a Lane's artery forceps. The same is carried out on the opposite side, and with a few extra snips of scissors the remaining attachments are severed, the nurse removes the forceps, and the womb is released. The artery forceps which have been applied are taken up in rotation and a silk ligature is applied to each vessel. If the cervix had previously appeared healthy I close the vagina by a continuous catgut suture; this is subject to one other condition, occlusion of all parametric vessels. If oozing continues I omit the vaginal suture (for drainage purposes) and proceed to suture the peritoneal flaps. Before closing the abdomen I always devote a few minutes to inspection of the work done and take care to leave the pelvic basin clean and dry.

As to ligature material, my custom is to use silk inside a clean peritoneum and slippery catgut outside. I find that very little blood is lost by this method, and all clamping and mass ligaturing in the dangerous uteric zone are avoided by the application of a forceps to each vessel as it is divided. I feel confident that if any surgeon wishes to try this plan he will find the uterine vessels very easy to deal with.

My reasons for advocating panhysterectomy are as follows: 1. In a considerable number of the patients on whom I found it necessary to perform hysterectomy for fibroid disease there co-existed some cervical lesion, such as laceration, glandular hypertrophy, or chronic endo-cervicitis, and I could not quite reconcile myself to the idea that the retention of a diseased stump was expedient. 2. In the condition described by Mr. J. Bland-Sutton as fibrosis it would be puerile to remove the body and leave the neck. 3. In some cases we are compelled to remain in doubt as to the nature of the tumour

until after a post-operative microscopic examination; a mistake on the wrong side would be nasty. 4. The development of cancer in the derelict stump is not unknown. 5. In cases of cancer and cervical fibroids panhysterectomy has to be performed. 6. If parametric drainage should be required I do not consider the stump of the cervix an ideal drain—i.e., an aseptic one providing free and spontaneous drainage. 7. I have found by experience that vaginal hernia does not take place if the vaginal wound is sutured and rarely does so even when this detail is omitted.

Buenos Ayres.

MENINGEAL INFECTION BY THE DIPLOCOCCUS PNEUMONIÆ, SIMULATING INFECTIVE CEREBRO-SPINAL MENINGITIS.

BY W. G. BARRAS, M.D. GLASG., L.S.SC. DURH., D.P.H.,
BACTERIOLOGIST, BURGH OF GOVAN.

THE clinical history of the following case presents several features of unique interest analogous to those met with in some cases of epidemic or infective cerebro-spinal meningitis, but differing from the latter in that it was due to an accidental and somewhat unusual infection by the diplococcus pneumoniæ. As will be observed from the clinical data, supplemented by the results of the post-mortem and bacteriological examinations, the case is one which is instructive, in so far as it is reasonable to suppose that cases of a similar nature in which the diagnosis is that of ordinary meningitis might be due to a like infection.

The patient, a boy, aged five years, was at school until April 11th apparently in good health, but on the morning of the 12th he complained of severe headache accompanied by persistent vomiting, and when seen by me on the 14th these symptoms still continued, besides which he was exceedingly restless, throwing his head back, tossing about in bed, grasping his head between his hands as if in severe pain, and clutching at his throat. At this stage the pupils were widely dilated. As the case was regarded as one of meningitis of rather an obscure nature he was removed to the Elder Cottage Hospital, Govan, by which time he had become comatose.

I have here to express my thanks to Dr. Hunter, physician to the hospital, for kindly furnishing me with the following history of the case from his admission until his death on April 16th, as well as for the results of the post-mortem examination of the head. On the afternoon of the 14th the patient was admitted to hospital in an unconscious condition. At first he was restless, tossing about in bed, and muttering constantly. Once or twice he asked for milk and showed doubtful recognition of his mother for a moment. There was marked hypersensitiveness to sound and to touch. The pupils were widely dilated and did not react to light. The plantar reflexes were normal. The heart and lungs were normal. The breath was markedly offensive, the odour being suggestive of what is found in diabetic coma. The lips were rather livid and cracked. The tongue was dry with some brownish fur on the dorsum. The urine, which was passed involuntarily, was loaded with urates but showed no trace of albumin or sugar. The bowels had not been moved for about 30 hours but an enema brought away rather a large motion with some hard masses. Difficulty was experienced in getting him to swallow food or medicine and recourse was had to rectal feeding. The temperature taken in the rectum on admission was 103·8° F., there being considerable oscillation, it once falling to 98·6° within 24 hours of admission, but ranged mostly between 101·2° and 103·6°. Just before death it rose to 106° in the axilla. The pulse varied in rate considerably from 104 to 142 per minute, being always compressible and at times counted with difficulty. Respiration never showed a cerebral character and ranged from 34 to 42 per minute. The pupils within 24 hours of admission became rather small and reacted readily to light and so remained. Tremor was noted in the muscles of the arms and there was marked orthotonos of the neck and upper dorsal region. Unconsciousness gradually deepened and the patient died about 40 hours after admission, the duration of the illness being about five days.

Necropsy.—A post-mortem examination was made of the head. The skull was rather thin. The dura mater was normal. The pia mater throughout was deeply congested and there was very little serous effusion on the surface of the brain. Over almost the whole convexity and base of the brain fibrinous pus was noted. The spinal cord was not specially examined but the part removed with the brain seemed less deeply injected and no pus was found on its surface. There was no trace of tubercle.

With regard to his previous history the boy had hitherto enjoyed good health, with the exception of measles and whooping-cough when about 12 months old. A physical peculiarity remarked upon by his mother was that he had a very short neck. As to the family history, the father is in good health but the mother is of a nervous temperament and is frequently subject to attacks of hysteria. The other members of the family, four in number, are all alive, although one sister at the age of 15 months suffered from convulsions and has been very nervous ever since. Another sister at the age of nine months had an attack of inflammation of the brain.

Bacteriological examination.—Cover-glass specimens prepared from the meningeal exudate showed in every instance large numbers of capsulated and extracellular diplococci. These were readily stained by the ordinary aniline dyes as well as by Gram's method. The diplococci were also well seen in smear preparations from the brain tissue. From these facts the conclusion arrived at was that the illness in question was a meningitis the result of infection by the diplococcus pneumoniæ. In such cases, however, the inflammatory condition is generally secondary to an attack of acute lobar pneumonia, as a result of extension from disease of the nose and ear, or from the effects of an injury to the skull. In this case, however, no such conditions existed and it can therefore only be regarded as a primary pneumococcic infection. The symptoms during life at one time gave rise to the suspicion that it might possibly be due to the diplococcus intracellularis meningitidis of Weichselbaum, but this view of the case was not borne out as a result of the bacteriological investigation.

Govan.

HÆMORRHAGIC SMALL-POX.

A CLINICAL NOTE OF 36 CASES.

BY CHARLES FRASER, M.A., M.D. EDIN.,
ASSISTANT MEDICAL SUPERINTENDENT, ST. PANCRAS INFIRMARY (SOUTH); LATE RESIDENT MEDICAL OFFICER, DAGENHAM SMALL-POX HOSPITAL.

THE frequency with which cases of hæmorrhagic small-pox properly so-called occur varies in different epidemics. Of 1200 cases of small-pox treated at Dagenham Hospital during the epidemic of 1902 36 belonged to this variety—i.e., 3 per cent. of all cases. It is convenient to recognise three types of this condition—viz: Type 1, characterised by the appearance during the initial stage of the disease of hæmorrhagic changes in the skin and visible mucous membranes, resulting in the production of petechiæ and ecchymoses, the patient almost invariably dying before the characteristic small-pox eruption has had time to declare itself; Type 2, including all cases in which the hæmorrhagic element involves not only the region of the pock but areas free from eruption; and Type 3, those cases in which the area of the pock alone is involved. In all three it is important to remember that, in addition to the production of petechiæ, the hæmorrhages may assume the form of epistaxis, hæmoptysis, hæmaturia, hæmatemesis, or melæna. The "pseudo-hæmorrhagic" case of the text-book is excluded from the present survey, as it displays none of the special features of the hæmorrhagic case proper. We shall consider each type separately.

Type 1.—Five cases belonged to this variety. Authorities appear to be unanimous in the view that the condition occurs almost exclusively in adults who had previously been robust and vigorous. The writer in Allbutt's System is of opinion that men are more frequently affected than women, whereas the writer in Nothnagel's Encyclopædia is responsible for the opinion that women are more often the victims, especially pregnant and puerperal women. The average age of our cases was 37 years, the youngest being

15 and the oldest 72 years. Four were women, but none of these were pregnant nor in the puerperium. All were of average physique and had previously enjoyed good health. The writer in Allbutt's System mentions that the condition is usually found in vaccinated persons. This is probably merely a coincidence; for he goes on to state that he has never found it in a person who had recently been vaccinated and presented a third of a square inch of well-foveated vaccination cicatrix.[1] The five cases under consideration had all been vaccinated, and four of them I have described as having been "well vaccinated"—i.e., exhibiting three or more scars which were distinctly pitted. Revaccination had in all cases been neglected. All ended fatally, the average duration of illness being only four and a half days. The most severe case was that of a woman who died on the second day of her illness.

Clinical note.—The state of the patient on admission was in all these cases much the same. Extreme prostration with absolute flaccidity of the whole muscular system and blunting of the intellectual functions were prominent features. Delirium of the low muttering, asthenic type was evident in all from the date of admission till death. The unclouded mind, regarded by many authorities as a peculiarity of this type of small-pox, was not observed. In all the patients the special hæmorrhagic symptoms were in full evidence on admission. In one only—a woman aged 72 years—the hæmorrhagic change, so far as external evidence showed, did not involve internal organs. Vomiting in an aggravated form occurred in one case only. The other four patients took nourishment well and were able to retain it. Considering the profound degree of the asthenia which characterised the cases the state of the heart was wonderfully good. The pulse varied from 120 to 140 per minute, was of fair tension, and rarely displayed any marked irregularity. This state of things continued until perhaps an hour or two before death, which appeared to be due to syncope. When circulatory failure did occur it came suddenly and was complete. In none of the cases was there any œdema of the face or other parts. There were no physical signs in the chest to suggest the presence of lung mischief. The respirations, however, were hurried. Osler appears to regard this acceleration of respiration in the absence of physical signs in the chest in conjunction with the comparatively moderate degree of pyrexia as of some diagnostic value.[2] From a composite chart of the five cases one observed that on the evening of the second day in hospital a temperature of 101·2° F. occurred with respirations at 48 per minute, and on the third day a temperature of 99° with respirations at 64.

Type 2.—21 cases belonged to this variety. It is said to occur most frequently in the debilitated, the alcoholic, &c., and men are reported to be affected more often than women (Nothnagel). 14 of our cases were men and several of them were big, robust fellows who had previously enjoyed good health and led regular lives. 14 had been vaccinated in infancy, nine of these having been "well vaccinated." All had failed to be revaccinated, and it is noteworthy that the two youngest patients, aged three and six years respectively, had never been vaccinated. All died, the average duration of illness being 6·9 days.

Clinical note.—On admission the general aspect of patients belonging to this group was one of intense fatigue. When not actually delirious they exhibited the same tiredness of intellect which characterised their bodily functions. Prostration was quite as profound as in the last group. Many complained of headache and backache; some complained of discomfort in the region of the stomach, and this was sometimes accompanied by vomiting. All had evidence on admission of the hæmorrhagic changes. In ten cases these manifestations became extreme. In four there was an entire absence of internal hæmorrhages. Indeed, these did not appear to have any relation to the virulence of the attack, for in the severest case of the group they were conspicuous by their absence. The typical small-pox rash was of the confluent variety, and in the case of the patient who lived longest it reached a condition of filmy vesiculation—confluent both on face and trunk. Delirium was a pretty constant symptom in this type of case. At first active and often dangerous—although the patient was incapable of any very sustained effort—it assumed the adynamic type towards the close. In only two cases was the symptom absent throughout their illness. Alert and full of apprehension, these men seemed to realise fully the extreme gravity of their condition. The heart did not at first give any sign of greatly failing power. The pulse varied from 110 to 130 and was regular—the tension being better and the vessel fuller than in Type 1. A few hours before death it became very weak, however, and death appeared to be due to syncope. The signs of circulatory failure appeared somewhat earlier relatively than in Type 1. In a few, towards the end of the illness, there was some œdema, especially of the face, but never very pronounced. A study of a composite chart of all the cases showed an evening temperature of 101° or 102°, with respirations increasing from 26 on admission to 48 before death.

Type 3.—Ten cases were of this variety. The average age was 26·8 years and the condition was equally distributed between the sexes. Two patients, aged respectively six and 14 years, had never been vaccinated, and of the others all with one exception had been vaccinated in infancy. Six had been "well vaccinated"; and it is worthy of mention that the only case of recovery was that of a man, aged 30 years, who exhibited five very distinct vaccination marks. He remained in hospital 41 days. One patient, aged 30 years, gave a history of having been revaccinated six days before the onset of his illness, and he died on the twelfth day of the disease. The operation as performed in infancy had been imperfect, the scars being faint and indistinct and of small area. A patient, aged 28 years, stated that she had been vaccinated for the first time ten years previously. The scars, however, were very faint and the patient died on the eleventh day of her illness. The average duration of the illness in the nine fatal cases was 10·7 days.

Clinical note.—The cases belonging to this group usually presented, on admission, the appearance of the early stage of confluent small-pox, and there was an entire absence of evidence to suggest that graver changes were impending. The initial symptoms had been severe, especially the headache and backache. As a rule the patient was in the full possession of his mental faculties. By the end of the third day of his illness the rash on the forehead had reached a condition of full papulation, the individual papules merging over large areas. A few hours later commencing vesicular changes were visible. In the course of the next 24 hours, as a rule, the hæmorrhagic element had declared itself by a darkening of the vesicles and the development of a petechial ring round individual vesicles or groups of vesicles. According to the severity of the case the changes were limited to the extremities or involved the trunk as well. With their advent the aspect and whole demeanour of the patient approached that of the last type. He became restless and anxious, and if he retained his intellectual faculties he seemed to anticipate a fatal issue. In five cases delirium was absent. When it occurred it appeared late and was of the low type and lasted until the death of the patient. Hæmorrhage from internal organs was less common than in the last two types, being entirely absent in five cases. The general condition of the circulation was good for the first few days. In the later stages the pulse became irregular and weak, increasing in frequency from 110 to 140 per minute. This condition of circulatory weakness lasted longer than in the former two types. Œdema of the face, &c., was prominent in most cases. Death did not appear so clearly to be due to syncope as to a general exhaustion the result of the profound toxæmia.

On glancing at the cases as a whole one or two facts remain to be recorded. In the first place, the unvaccinated person suffering from small-pox appears to be more liable to this type of the disease than the vaccinated. In the present instance 3·3 per cent. of unvaccinated cases suffered from the hæmorrhagic type, as against 3·1 per cent. of the vaccinated. Further, the young tend to escape—only three out of the 36 cases being under ten years. Out of a total of 1200 cases of small-pox there were 198 persons under the age of ten, practically all of them being unvaccinated; 1·5 per cent. of these suffered from the hæmorrhagic variety, as against 3·3 per cent. of all cases over that age. The average age for the whole series is 32·4 years. Men were more frequently affected than women, in the proportion of 20 to 16. An interesting fact which ought not to escape notice was the voraciousness of the patient's appetite and his ability to retain and utilise nourishment. In a few cases gastric derangement with vomiting was prominent and even in these cases one noted an anxiety for the food which they were unable to retain. This seemed to be a characteristic of small-pox patients in general and the increased gravity of this particular type did not appear to diminish the desire for nutriment.

[1] Allbutt's System of Medicine, vol. ii., p. 204.
[2] Osler's Principles of Medicine, p. 63.

FORMALDEHYDE IN MILK.

BY W. SCOTT TEBB, M.A., M.D. CANTAB.,
PUBLIC ANALYST TO THE METROPOLITAN BOROUGH OF SOUTHWARK.

IN view of the recent outbreak of "epidemic skin disease"[1] the accurate estimation of formalin[2] in milk becomes a matter of considerable importance and the object of the present paper is to recommend to notice the following process which will be found to give trustworthy results. The method depends on the pink colour which develops when fuchsine decolourised with sulphurous acid (Schiff's reagent) is added to the clear filtrate obtained after the precipitation of casein and fat from diluted milk. It has long been known[3] that if milk is diluted and acidified the whole of the casein and fat may be precipitated, leaving a clear liquid on filtration. I first made experiments to see if milk containing formalin would retain the preservative on being subjected to this treatment and also if the depth of colour given by the Schiff's reagent was in proportion to the amount of preservative present. These preliminary tests were entirely satisfactory and I have since worked out the process in detail as follows.

To precipitate the casein and fat from milk.—To estimate formaldehyde by this process it is essential to obtain a perfectly clear filtrate from the milk and after numerous experiments the following is the method which I have found to answer best. 50 cubic centimetres of the sample are measured out into a tall cylindrical glass of 250 cubic centimetres capacity, the glass is filled up to the 250 cubic centimetre mark with water, the milk and water are well mixed together, and then is added 0·4 cubic centimetre of a 25 per cent. solution of sulphuric acid. The mixture is well agitated with a glass rod for a minute or so. The casein and fat will then separate as a coarse precipitate, leaving a more or less clear liquid at the top. The precipitate is allowed to settle for about five minutes and then the liquid is filtered. I use a large funnel of four and a half inches diameter with Chardin filtering paper which must first be well wetted. In the majority of samples the filtrate will come through quite clear but occasionally it will be opalescent or even milky; when this happens the remainder of the 250 cubic centimetres should be poured on to the filter and it will be found that after about 100 cubic centimetres have gone through the filtrate will become quite clear; this is owing to the precipitate itself lining the inside of the filter and increasing the filtering power of the paper. By attention to these details I have never had any difficulty with fresh milk and have often been successful with milk a day old, but, as I shall presently point out, for reasons connected with the rapid disappearance of the formaldehyde, whenever possible the analysis should be conducted on the day the sample is purchased.

Preparation of the Schiff's reagent.—One gramme of ordinary crystalline fuchsine (*not* the acid fuchsine) is weighed out and placed in a 50 cubic centimetre flask, which is filled up to the mark on the neck with a cold *saturated* solution of sulphurous acid in water. The sulphurous acid solution may be conveniently prepared by means of a syphon of the compressed gas. After standing for several hours the fuchsine loses its colour and goes into solution, the liquid assuming a light yellow tint. Then the 50 cubic centimetres are diluted to one litre with distilled water and proceed as follows. Two Nessler glasses are taken, to one of them is added 0·5 cubic centimetre of a 1 in 1000 dilution of formalin, and both glasses are filled up to the 50 cubic centimetre mark with water; then five cubic centimetres of the Schiff's reagent are added to each glass, which is stirred and allowed to stand for ten minutes. It will be found that both Nessler glasses show a marked pink colour—that is to say, that at this stage the simple dilution of the reagent with water will give a similar reaction to the formaldehyde. To make the Schiff's reagent sensitive sulphurous acid gas is bubbled in from the syphon for about ten seconds at a time until a point is reached when it will react in the Nessler glass containing formalin, but not with the plain water after standing for ten minutes. If the reagent is too strongly impregnated with sulphurous acid it will cease to react to the formalin and hence the care required in conducting these operations. I find that 250 cubic centimetres of the Schiff's reagent prepared as above (0·1 per cent. fuchsine) will be made sensitive by bubbling in the gas at a medium rate for about 30 or 40 seconds.

Application of test.—50 cubic centimetres of the clear filtrate from the sample of milk are poured into a Nessler glass, five cubic centimetres of the Schiff's reagent are added, and the mixture is allowed to stand for ten minutes. In estimating small traces of formaldehyde, which may readily be done if the Schiff's reagent is sufficiently sensitive, it is advisable to allow the liquid to stand for a longer period—that is to say, for half an hour or even an hour. To estimate the exact percentage of formaldehyde a number of standards must be prepared of known amounts of formalin added to milk. Each standard is treated by precipitation, filtration, &c., in precisely the same manner as the sample. The Schiff's reagent is then added and the colour of the sample in the Nessler glass is matched with the nearest standard. In ordinary milk adulteration I should expect to find from 0·002 to 0·001 per cent. of formaldehyde and should make up eight standards containing 0·002 per cent., 0·001 per cent., with six intermediate percentages. If the Schiff's reagent is already prepared the whole analysis, including the precipitation, filtration, &c., of the eight standards can easily be completed within the hour.

The following experiments were carried out to show for how long after the addition of the formalin it is possible to detect it in the milk:—

TABLE I.

Percentage of formaldehyde added to milk.	Percentage of formaldehyde detected—					
	After 5 hours.	After 21 hours.	After 29 hours.	After 45 hours.	After 53 hours.	After 72 hours.
0·0055	0·0047	0·0047	0·0045	0·0032	0·0024	0·0001
0·004	0·004	0·0034	0·00285	0·0017	0·00135	0·00005
0·0025	0·0017	0·0017	0·0016	0·00037	0·00017	None found.
0·001	0·00083	0·00025	None found.	None found.	Fone found.	None found.

The temperature taken at the time of the experiments varied from 21° to 23° C. It will be observed from the table that the length of time formalin may be detected in the milk depends on the amount added. Thus with 0·0055 per cent. or 0·004 per cent. a considerable proportion was present at the end of 53 hours. With 0·0025 per cent. a large quantity remained for 29 hours, while in the case of 0·001 per cent. almost all the preservative had disappeared by the following day. Table II. is a record of a further series of similar observations.

TABLE II.

Percentage of formaldehyde added to milk.	Percentage of formaldehyde detected—		
	After 5 hours.	After 24 hours.	After 48 hours.
0·005	0·005	0·00375	0·00025
0·0025	0·00156	0·0015	0·00020
0·001	0·0008	0·00020	None found.

These results agree generally with those given in Table I.; the formaldehyde, however, disappeared more rapidly. This was in all probability due to the warm weather experienced at the time that the experiments were conducted (from 24° to 27° C.).

The next table gives estimations of the lactic acid and must be considered in conjunction with Table II. The observations recorded in the two tables were carried out under precisely similar conditions. Thus they were made at the same time, on the same morning's milk, and the percentages of formaldehyde added in each case were identical. The object of these experiments was to discover

[1] See Dr. Monckton Copeman's Report to the Local Government Board on an Outbreak of Epidemic Skin Disease at the Central London Sick Asylum, Hendon, No. 194, April 19th, 1904.

[2] Solution of 40 per cent. formaldehyde in water.

[3] See "A Course of Practical Elementary Physiology," p. 121. Foster and Langley, 1880.

whether the inability to detect formalin after certain intervals of time was accompanied by any loss of preservative power as shown by excess of lactic acid. The acidity was determined by titration with one-tenth normal caustic potash using phenol-phthallein as an indicator and calculated as lactic acid. The figures for unpreserved milk are given as a control. At the time of purchase the milk exhibited an acidity of 0·099 per cent. calculated as lactic acid.

TABLE III.

—	Percentage of acidity calculated as lactic acid.		
	After 5 hours.	After 24 hours.	After 48 hours.
Unpreserved milk	0·198	0·688	0·720
Milk 0·005 per cent. formaldehyde ...	0·144	0·184	0·697
Milk 0·0025 per cent. formaldehyde ...	0·144	0·261	0·810
Milk 0·001 per cent. formaldehyde ...	0·135	0·693	0·738

On comparing Tables II. and III. it will be found that when formaldehyde is present it checks the development of the lactic acid. Thus, after 24 hours 0·005 per cent. formaldehyde becomes 0·00375 per cent. and is associated with 0·184 per cent. lactic acid, but on the further reduction of the formaldehyde at the end of 48 hours to 0·00025 per cent. the lactic acid is increased to 0·697 per cent. This shows that after a lapse of time formalin in milk not only ceases to respond to chemical tests but also loses its preservative powers, thus indicating that in all probability it undergoes some fundamental change.

Southwark, S.E.

TWO CASES OF POISONING BY MUSSELS—ONE FATAL.

BY R. ROLFE, M.B., B.C. CANTAB.,
MEDICAL OFFICER TO THE NEW DOCK HOSPITAL, AVONMOUTH.

ON the afternoon of July 13th two sailors, one aged 57 years and the other aged 70 years, gathered some mussels from a dock gate. It was known that the water was polluted by sewage but in spite of this the inhabitants of the place often ate shell-fish gathered from this situation. The mussels were carefully washed and cooked thoroughly in several changes of water. They were then eaten, flavoured with salt and vinegar. About four hours after the meal both men were seized with giddiness. They described the feeling as like that of gradually wading into water out of their depth. Their legs became unsteady and they felt as if "they could fly." They were soon unable to stand and were taken below and medical aid was summoned. The first-named patient vomited several times. When first seen the signs and symptoms were much alike in both cases. The patients complained of giddiness and were unable to sit up in bed. They had slight abdominal pain. There was mental excitement and the condition resembled closely the early stages of alcoholism. The pulse was full and bounding but not increased in rapidity, being 76 in one case and 80 in the other. The heart sounds were clear and loud. The temperature was normal. There was numbness of the extremities, especially the hands, and sensation was much diminished. The elbow and knee reflexes were present and not exaggerated. The pupils were dilated but reacted to light. In both cases the abdomen was distended and tympanitic but there was only very slight tenderness on firm palpation in the epigastric region. As it was now five hours after the eating of the mussels the stomachs were not washed out but a moderate dose, one and a half ounces, of oleum ricini was given in spirit. Both men, however, began to experience dryness in the throat and a feeling of constriction in the neck. Quite suddenly the first-named patient had an attack of syncope and died. The symptoms in the case of the other patient grew gradually worse. His abdomen became more and more distended and he was slightly delirious and was with difficulty restrained in bed. At each attempt to rise a syncopal attack was brought on and he complained much of difficulty in breathing. This difficulty was greatly relieved by repeated cold compresses on the neck. Hot fomentations were applied to the abdomen to relieve the distension but without much result. Hot, strong coffee was given by the mouth but the patient had the greatest difficulty in swallowing it and very small quantities had to be given at a time. The effect was very marked, the patient feeling much better after each drink; but this result was transient and the coffee had to be repeated frequently—about every half hour. Aromatic spirit of ammonia was given in a half-drachm dose in hopes of relieving the abdominal distension, but though the spirit was diluted to one ounce a bad result was produced, the patient nearly choking and a syncopal attack following. As the oleum ricini showed no signs of acting after six hours a large soap-and-water enema was administered with good result. The patient felt much better after this and was able to be removed to the Avonmouth Cottage Hospital. On admission a draught containing saline aperients and cascara was given but no result was produced in three hours, so further enemata were resorted to. Under this treatment the patient made rapid improvement. The tongue, which had become very furred and dry, cleared and the restlessness passed off and the patient fell asleep. On awaking he complained of headache and giddiness, but these symptoms passed off in two days. On admission his urine contained half albumin, on the next day this amount had diminished to one-third, and on the following morning to less than one-sixth. When seen four days afterwards the patient felt quite well. The urine still contained a trace of albumin, but this may be accounted for by old kidney disease. The patient admitted that he had suffered from Bright's disease.

The post-mortem examination of the first-named patient revealed nothing special. The usual signs of heart failure were present and the heart was even more flabby than is generally the case. The mucous membrane of the stomach, the duodenum, and upper part of the jejunum was pale. The brain was also anæmic. There was no macroscopic change in the kidneys, which appeared quite healthy, nor was the spleen enlarged. The urine drawn from the bladder contained one-sixth albumin.

The principal features of these cases were: (1) the difficulty in eliminating the poison from the system, as neither flatus nor fæces were passed even under the influence of purgatives, the gut appearing to be paralysed; (2) the tendency to syncope if the patients attempted to sit up; (3) the afebrile course—in neither case did the temperature rise above normal; (4) the comparative infrequency of the pulse, which never rose above 80 even when syncope threatened; and (5) the marked beneficial effect of coffee on the pulse and on the general condition of the patient. It is curious to note that the first-named patient, who was 13 years younger than the second, who vomited freely comparatively soon after eating the mussels, and who had presumably healthy kidneys, succumbed to the toxins which the other resisted. Both men had eaten about the same number of fish.

Avonmouth, Gloucestershire.

A NEW PATHOGENIC BACTERIUM CAUSING BASAL MENINGITIS IN INFANTS.

BY W. D'ESTE EMERY, M.D., B.SC. LOND.,
CLINICAL PATHOLOGIST TO KING'S COLLEGE HOSPITAL; PATHOLOGIST TO THE CHILDREN'S HOSPITAL, PADDINGTON-GREEN.

CASE 1.—A male, aged one year and ten months, was admitted to the Paddington Green Children's Hospital, under the care of Dr. Guthrie, with a history of six days' illness, the symptoms being drowsiness and vomiting. There was no history of otorrhœa. When admitted he was apathetic and drowsy but not comatose and apparently not in pain. There was no squint and the pupils were contracted but reacted to light. There were no convulsions and no rigidities; the reflexes were normal. Kernig's sign was not given. There was a well-marked tache. Three days after admission there was definite retraction of the head and the patient had several convulsive fits with general rigidity of the body and limbs and conjugate deviation of the head and eyes to the left. On the next day there was internal squint of the left

eye and the pupils were dilated and did not react to light. Six days after admission the respiration was affected, becoming sighing and irregular. The eyes were examined and the retinal vessels were found to be congested; the discs were pale, with indistinct edges. The convulsions ceased. Eight days after admission lumbar puncture was performed. The fluid was quite clear and contained but a trace of albumin. The microscopical appearance of films from the deposit of the lumbar puncture fluid and the result of cultures will be described below. The temperature on admission was about 100° F. and rose gradually and fairly uniformly until death occurred, reaching 104° as its maximum. The child died nine days after admission, or 15 days after the onset of the disease, and the day before death seemed to suffer from pain in the left ear.

Necropsy.—At the post-mortem examination extensive basilar meningitis was found. There were large and thick collections of greenish lymph of gelatinous consistency in the region of the anterior perforated space, the tips of the temporo-sphenoidal lobes, and under the central lobe of the cerebellum, but thinner sheets of the same material united these main collections and extended along the vessels, especially in the Sylvian fissure. The condition was practically symmetrical. The surface of the brain was hyperæmic and the convolutions were flattened. The ventricles were moderately distended with fluid which was colourless and slightly turbid. The right middle ear was normal, containing only the mucoid material so commonly seen in young children. The left contained thick pus. The membrane was intact on both sides. The sinuses were normal. Cultures and films were made from the cerebral pus and films were made from the pus in the left middle ear. There were no other morbid appearances in the body except that the retroperitoneal and mesenteric glands were enlarged but apparently not tuberculous. The films prepared from the cerebro-spinal fluid obtained by lumbar puncture showed but few cells, those present being mostly degenerated endothelial plaques. They showed vast numbers of organisms which were so variable in shape and size as to indicate the presence of a large number of species. The prevailing form was a diplococcus which varied greatly in size, the smallest forms being no larger than meningococci whilst the largest were fully three times that size. The individual cocci were quite round, or more frequently short cylinders with rounded angles. There were also single coccoid forms, often of large size (3 μ or 4 μ in diameter). Lastly, there were numerous bacillary forms which resembled the individual cylindrical cocci mentioned above but in which the length was three or four times greater than the breadth. They showed very marked polar staining. There was no sign of spore formation. Slight indications of the presence of a narrow capsule occurred but this might have been an artefact. The organisms did not stain by Gram. They were almost entirely extracellular. The culture was prepared by allowing the fluid to flow directly from the needle on to ordinary agar and after 24 hours' incubation presented numerous isolated colonies. Three of these were common air organisms (two of sarcina alba and one of micrococcus roseus) whilst the remainder were similar to one another and of a greyish-white colour. Films prepared from these latter colonies showed the presence of an organism exactly resembling those seen in the films except that coccoid and bacillary forms predominated, the diplococcoid form being comparatively infrequent. Some giant diplococci of large size and great affinity for stains were present. The appearances of the colonies indicated that they were pure but they have been repeatedly plated out without losing any of their characteristics. The films made from the pus from the ear and from the meningeal exudate showed organisms exactly like those seen in the lumbar puncture fluid, but unfortunately no cultures were made.

CASE 2.—A male, aged nine months, was admitted to the Paddington Green Children's Hospital under the care of Dr. Sutherland, having been ill for one month. The illness began by convulsions and vomiting. The latter continued but the former passed off and was replaced by twitchings of the hand and head. Four days before admission his neck became stiff. On admission the child was conscious but apathetic; he lay on his back with his legs in a position of flexion. The pupils were moderately contracted and reacted well and there was no squint. There was a slight nasal discharge. The tympanic membranes were examined and appeared to be healthy. There was a slight tache and Kernig's sign was present on both sides. There was occasional vomiting. After a day or two in hospital he became extremely restless, with constant twitching of the extremities, cerebral breathing became marked, and the abdomen became retracted, whilst the rigidity of the neck increased. Eight days after admission lumbar puncture was performed. The fluid had a yellowish tinge and contained a large quantity of albumin. From this point the child steadily went downhill and died 19 days after admission, or about seven weeks from the onset of the disease. The temperature on admission was about 98° F., with occasional brief excursions to 100° or thereabouts. It rose gradually until it averaged about 101° and remained so until 36 hours before death, when it suddenly rose to 107°.

Necropsy.—The post-mortem appearances in this case were quite similar to those in the foregoing but more marked. Large masses of creamy, greenish-yellow pus occurred beneath the pia mater at the anterior perforated space and the tips of the temporo-sphenoidal lobes whilst there was but little on the lower surface of the crura and cerebellum. The pus tracked alongside the vessels on to the hemispheres but not to so great an extent as in the previous case. Here, however, there was a great excess of turbid fluid in the pia-arachnoid space at the base of the brain, a condition which did not occur in the previous case. The convolutions were flattened and the meninges over them were hyperæmic. The ventricles were greatly distended with turbid fluid and contained coagulated masses of creamy, yellowish-green pus. The lining membrane of the whole ventricular system was injected and apparently œdematous, yet moderately tough; it could be readily peeled away from the subjacent tissues and had the general appearance of granulation tissue. The iter was greatly dilated. The spinal cord was also affected, a layer of greenish pus extending down the dorsal surface as far as the conus medullaris. The middle ears were full of greenish pus similar to that seen in the brain and the membranes were intact. There was no thrombosis of sinuses. The abdominal lymph glands were enlarged but not caseous. Nothing else abnormal was noticed. Cultures and films were made from the pus from the brain and ears. The films prepared from the lumbar puncture fluid in this case were richer in cells than in the foregoing, highly degenerated polynuclears being present as well as endothelial cells. Here also there were vast numbers of organisms, the predominating form being a bacillus which was about as wide as those present in the previous case, or a little narrower, and of very variable length; the shorter forms were but slightly longer than they were wide, and the longest forms were leptothricial filaments reaching a third of the way across the field of a $\frac{1}{12}$ inch lens. In the more abundant forms the length was about four or five times the breadth. Polar staining was fairly well marked, there was no spore formation, and they did not stain by Gram. They were mostly extracellular, though clustered about the cells, but in a few cases they seemed to be engulfed and to lie in vacuoles in the protoplasm. There was the same doubtful appearance of capsulation. In this case coccoid and diplococcoid forms occurred, but were uncommon. In the films prepared from the pus from the ears and meninges of this case similar bacteria were seen but were much less numerous; here also the bacillary forms predominated, though large diplococcoid forms occurred. Capsulation was better marked.

So different were the appearances of the organisms in the above cases that their identity was hardly suspected until cultures made from the meningeal and tympanic pus were examined. These showed abundant growth in 24 hours and both were pure, presenting on microscopic examination appearances identical with those seen in the culture from the lumbar puncture fluid in the first case. The cultural characters have not been worked out in full but the following features will probably suffice for the recognition of the organism. The growth on agar at 37° C. was extremely rapid, isolated colonies acquiring a diameter of three or four millimetres or even more in 24 hours. They were white or greyish-white in colour, opaque, and were circular in shape and often had slightly raised edges. They rapidly extended and the whole surface of the medium was soon covered with a uniform whitish layer. Streak cultures on agar showed a similar flat growth which spread quickly. The organism grew well on gelatin at the ordinary temperatures. Streak cultures showed a featureless ribbon-like growth similar to that seen on agar but without the same tendency to spread. Stab cultures were more characteristic. The growth was white or slightly grey and opaque. It extended to the bottom of the stab but was slightly more abundant at the top, whilst

on the free surface there was a rounded button of growth very similar to that seen in cultures of bacillus pneumoniæ. The gelatin was not liquefied. Growth in broth was not very abundant. At first the medium was uniformly turbid, whilst after a time there was a slight deposit. No scum was formed. The microscopic appearances of the organisms from the cultures were on the whole similar to those seen in the lumbar puncture films in the first case, but there were minor differences. The single coccoid forms predominated and in some cases of very large size. Diplococci also occurred. Lastly, there was a small proportion of bacilli, some of them quite long and in some cases clubbed or spindle-shaped. They stained uniformly or showed polar staining, and there were no spores. The organism was non-motile and did not stain by Gram.

CASE 3.—This case does not call for prolonged notice. The patient was a girl, aged two years and eight months, who was admitted to the Paddington Green Children's Hospital under the care of Dr. Guthrie. She was ill for 18 days with typical symptoms of meningitis. Her temperature kept about 100° F. until just before death, when it rose to 109°. There were no signs of tubercle (except, perhaps, a few crepitations at the right base) and the condition was diagnosed as cerebro-spinal meningitis. Lumbar puncture fluid was almost clear and contained but little albumin. It showed few cells and numerous organisms similar to those seen in the two cases described above. No cultures were taken.

Necropsy.—At the post-mortem examination there were extensive tuberculosis of the lungs and mesenteric and abdominal glands and tuberculous meningitis. The ears contained muco-pus. Cultures were made from the meningeal exudate and from the pus in the ears and gave numerous colonies of the organisms described above, together with a few colonies of yellow and white staphylococci. This was a secondary mixed infection, probably from the middle ears.

The above cases 1 and 2—fatal cases of basal meningitis in infants which have occurred recently in the Paddington Green Children's Hospital—are of peculiar interest in that they were associated with, and appeared to be due to, an organism quite unlike any known pathogenic bacterium; whilst in a third case, one of tuberculous meningitis, the same organism greatly predominated in a mixed infection which took place before death. The above is a brief account of the clinical history and post-mortem appearances of these cases. I reserve a fuller account of the pathogenic organism for a future occasion when its characters have been more fully investigated. The two cases in which this organism was present in pure culture in the exudate in the cerebral and spinal meninges, and in the pus which was present in the middle ears, occurred within three weeks of one another. Both patients came from the West of London but not from the same district, and there was no reason to suspect a common source of contagion.

In the three cases mentioned above we find the organism was isolated in cultures once during life from the cerebro-spinal fluid and twice after death from the meningeal exudate and also from the pus from the middle ear. It was seen in films from the lumbar puncture fluid, from the meningeal lymph or pus, and from the tympanic pus in all cases. It seems fairly certain that it must be regarded as being the cause of the disease in the first two cases and as an important secondary infection in the third. The association of pus in the middle ear in all three cases and the presence therein of the same organism as was found in the brain is of some interest in connexion with the etiology of the disease and of meningitis in general. It is, of course, impossible to say whether the brain was infected from the ear or *vice versâ*. A point in favour of the view that the ear became infected secondarily is the fact that in the first case no pain in the ear was noted until the day before death, whilst in the second case there was a discharge from the nose, suggesting another possible source of infection. It is very unfortunate that this discharge was not examined bacteriologically. In this case, too, it is noteworthy that there was no notice of any symptoms pointing to pain in the ear, suggesting that the inflammation may have come on whilst the patient was semi-comatose; further, the ears were examined on admission and the tympanic membranes were found to be normal. On the other hand, in the few cases of septic meningitis following injury in which I have had an opportunity to examine the ears there has been no suppuration, suggesting that a purulent inflammation does not easily travel in that direction.

I have to thank Dr. Guthrie and Dr. Sutherland for permission to publish these cases, and Mr. Holland and Mr. Gilford, house physicians to the hospital, who performed the lumbar punctures and provided me with the materials thus obtained.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SURGICAL EMPHYSEMA AS A COMPLICATION OF DYSTOCIA.

BY WILLIAM M. EMMERSON, L.S.A.

THE patient in the following case was a primipara, aged 22 years; she was small but well built and well nourished and was in good health. Labour commenced about 7 A.M. When I saw her at 9 A.M. labour pains had fairly set in; the membranes had ruptured and the size of the os was about that of a shilling. Abdominal palpation established the fact of a head presentation but the position of the head could not be satisfactorily determined. As the presenting part came within reach of the finger the mouth and nose were recognised, causing a face presentation to be diagnosed. As the head was fixed, the pains good, and the pelvis fairly roomy I decided not to interfere with the presentation but leave the case to nature and two grains of pilula opii were administered. At 7 P.M. the patient was in strong labour and the child's face was well down on the perineum. Its advance was now slow and the pains became violent, birth taking place at 7.50 P.M. A few minutes prior to the birth the patient's appearance was normal, but immediately after the long and violent effort which expelled the fœtus her face was noticed to be much swollen and she complained of a choking sensation. Her pulse was 110 per minute, weak but regular, and she was much exhausted. I attributed the swelling to congestion, which I have before observed, but on the next day the face was still greatly swollen, as was also the neck, the malar bones and prominence of the clavicles being obliterated. She still complained of the choking sensation. Palpation over the clavicles and bony parts of the face gave a crackling sensation to the fingers.

On examining the chest the same sensation was felt over the ribs and auscultation revealed fine hair-like crepitations over the whole front of the thorax and neck. The percussion note was normal all over. There was no *bruit d'airain* or other sign of pneumothorax. The pulse-rate was still 110 and the temperature was 99·5° F. The patient had slept fairly well and beyond the choking sensation there was no discomfort except slight shortness of breath. The swelling and auscultatory phenomena gradually decreased and completely disappeared in four or five days' time. With the exception of retention of urine, necessitating the use of the catheter for two days, convalescence was uneventful. Careful subsequent examination of the chest revealed no alteration in the percussion note at the apices or elsewhere and no signs of tubercle. The patient is now, after a lapse of two months, in her usual good health. The condition was presumably due to rupture of air vesicles on one or both sides of the chest caused by the violent bearing-down efforts, the air escaping into the neck at the root of the lung. The patient was delivered of a stillborn fœtus with posterior hydrencephalocele and omphalocele.

Hebburn-on-Tyne.

A CASE OF EXTRAVASATION OF URINE.

BY THOMAS P. CODD, L.K.Q.C.P., L.R.C.S. IREL.

THE following case of extravasation of urine may interest some readers of THE LANCET.

The patient was a man, about 50 years of age, who had for 21 years been suffering from traumatic stricture which occasionally caused retention of urine, but he was generally able to relieve himself by using a French bougie catheter No. 4. He was a Spaniard and was once treated by a Greek medical man who told him when he could not pass urine to use a French bougie No. 4 and after passing it down to the

stricture to remove the stilet (if it did not pass through) and to let a little oil flow down through the catheter. He invariably passed it into the bladder, at the same time using it slowly and patiently. On July 13th, 1904, about 8 P.M. I was sent for and found him in bed with a number of pieces of absorbent wool saturated with arterial blood which was escaping from the urethra. He told me that while coming that afternoon from the North of Ireland in the train his bladder became over-distended and on getting out to pass urine he found himself at first unable to do so. He used all the force he could and felt something giving way; the urine then passed freely through the urethra and he obtained the greatest relief; blood afterwards came away and continued to escape for some hours until he sent for me. I prescribed rest and a mixture of ergot and opium, also ice to the perineum. On the next morning his wife sent word that the bleeding had stopped and that he had gone to business. He sent for me again in about ten days. I found him in bed with a quick, bounding pulse and a temperature of 101° F. The right testicle was swollen and tender. He told me that some years ago he had inflammation in the same testicle and had to apply three leeches which gave him relief. I did not care to use leeches, but I prescribed a lotion containing diluted solution of subacetate of lead which he applied for some days. On the inner side of the testicle a swelling came on gradually and eventually fluctuation could be felt. I recommended linseed poultices, not too large, which he kept on for a few days. I then made a free incision about an inch long in the scrotum whereupon watery fluid which had a very fetid odour gushed out, and after the opening was enlarged by Hilton's method there came out mixed blood and pus. I packed the wound with sal-alembroth absorbent gauze. On the next day the patient's temperature was 97° and his pulse-rate was 80; he had no difficulty in passing urine and felt quite comfortable. I syringed the wound daily with boric acid lotion and packed it with sal-alembroth absorbent gauze; it is now healing by granulation and the man has gone away for a change of air. I was surprised that the extravasation was not more extensive and that it came on so slowly.

This is an example of the danger of a patient forcing himself to pass urine when he is suffering from retention due to traumatic stricture and it might be of service for medical practitioners to caution patients in this respect. Happily such cases are rare, as this is only the second which I have seen after being in practice for 18 years.

Drumcondra, Dublin.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF EXCISION OF THE RECTUM FOR CARCINOMA; DEATH 21½ YEARS LATER FROM SECONDARY DEPOSITS IN THE LIVER.

(Under the care of Mr. C. T. DENT.)

THE following case is a very remarkable one owing to the extraordinarily long period of time in which malignant disease lay dormant after the operation of excision of the rectum. 21½ years of freedom from recurrence should be noted in these days of hopeless pessimism in cancer problems. For the notes of the case we are indebted to Mr. T. Crisp English, surgical registrar.

The patient was operated upon by Mr. C. T. Dent in 1882 for carcinoma of the rectum, and the following is an extract of the notes taken upon the case at the time.

The patient, a man, aged 52 years, was admitted into St. George's Hospital under the care of the late Mr. J. Rouse on August 18th, 1882. He stated that he had suffered from "piles" for about two years but had had no serious trouble until two months before admission, when he became subject to a continual desire to strain and to go to the closet; there was great pain after motions, especially when he was at all constipated, and he had passed small quantities of blood and slime. The pain and tenesmus had steadily become more severe and he was rapidly losing strength and flesh. On admission there were seen small external piles, and on the posterior wall of the rectum was a hard lobulated mass about one inch in diameter; blood and mucus came away on the examining finger; there was great pain, especially on sitting down. On Sept. 1st, Mr. Rouse examined the rectum under an anæsthetic and found extensive glandular carcinoma of the posterior wall, but the patient was so ill that it was thought inadvisable even to perform a colotomy. The pain was at first relieved somewhat by morphine suppositories but the tenesmus remained very troublesome, blood and mucus continued to discharge in large quantities, and finally the pain became very severe. On Nov. 8th a consultation was held and operation was decided upon in the hope of affording some relief to the patient's symptoms. On the following day therefore an anæsthetic was given and Mr. Dent made a careful examination of the rectum. A large, hard, and somewhat nodulated mass of malignant disease was found on the posterior and left aspect of the bowel just inside the anus; with the finger it was just possible to reach healthy bowel above. The growth was evidently of some thickness, extending deeply into the left ischio-rectal fossa. Mr. Dent then excised the rectum by the perineal route; an incision was made round the anus and gradually deepened until the bowel was completely detached from its connexions; the lower five inches were removed, the peritoneal cavity being opened in the process; attempts to draw the bowel down to the level of the skin proved unsuccessful. Hard nodular remnants were then dissected out of the ischio-rectal fossa. For a day or two after the operation the patient was in a critical state and then made a steady recovery. The wound healed well but a strong tendency to contraction of the anal orifice caused some trouble. This was successfully treated by the regular passage of bougies and division of constricting bands. The patient rapidly picked up his strength and gained flesh and was sent to the convalescent home on March 18th, 1883. The excised rectum was unfortunately not examined microscopically, but there can be no doubt that it was a case of malignant disease far advanced and much ulcerated.

On five occasions during the next 18 months the patient was readmitted into hospital for severe diarrhœa and evidence of ulceration of the large intestine; there was marked tenderness along the whole of the colon. On each occasion he was greatly benefited by voluminous injections of strong silver nitrate solution. Eventually this trouble ceased and he remained in excellent health until the end of 1903, having full control of solid fæces and partial control of liquid fæces. A short time before Christmas, however, he found himself becoming weaker and his medical attendant, Dr. F. B. Thornton, discovered enlargement of the liver; there was no jaundice, vomiting, or melæna.

On Jan. 29th, 1904, he was readmitted into the hospital, being now 74 years old; he appeared in fair health although rather wasted and pale, but considering his age he was wonderfully vigorous; he complained of no pain. The anus was represented by a deep funnel-shaped depression which appeared perfectly healthy. At the site of the union of the divided bowel to the surrounding parts was a sphincter-like constriction which admitted the forefinger fairly easily; there was slight prolapse, just extending down to the ring, of perfectly healthy mucous membrane. No trace whatever of disease was found in this region. In the abdomen the only disease that could be discovered appeared to be in the right lobe of the liver beneath the right rectus muscle; the liver was markedly enlarged, reaching to three fingers' breadth below the costal margin; its surface was hard and presented large nodules; there was no ascites. Both Sir Isambard Owen and Mr. Dent considered that the enlargement was undoubtedly malignant; the liver did not in any way appear like a cirrhotic liver. There were no indications for treatment and the patient returned home on Feb. 9th. On April 25th Dr. Thornton wrote to say that the patient had died with every evidence of secondary malignant metastases but that the relatives could not be induced to consent to a post-mortem examination.

Remarks by Mr. DENT.—The remarkable feature of this case is that the patient survived for 21½ years and

then died from disease which, though it remained latent for so long a period, was, I think, undoubtedly secondary to, and directly connected with, the original mischief. The possibility of a new primary malignant growth cannot, in the unfortunate absence of a post-mortem examination, be wholly denied, but there was no evidence whatever of any such lesion. Duplay, in an extensive collection of cases, mentioned one of survival for 16½ years. Volkmann records one in which death occurred eight years after operation from deposits in the liver without local recurrence. Many instances of death from secondary malignant disease at long periods after removal of the breast for carcinoma have been recorded. I have seen one such case in which death took place about 27 years after removal of the breast and I well remember another patient whom I saw about every three months after removal of the breast for scirrhous carcinoma. 11 years after operation she seemed absolutely well but 12 months later she died from secondary malignant disease involving the sigmoid flexure, the form of secondary mischief that so often carries off these patients. In the face of such cases it seems unwarrantable to talk of the curability of carcinoma or to fix an arbitrary time-limit and to argue that patients who pass that limit are "cured." In the case above recorded the site of the operation was perfectly free from disease as far as could be judged. The perineal operation in this instance appeared to have answered quite as well as the more modern methods of Kraske and Bardenheuer and the control of the fæces was quite satisfactory.

Reviews and Notices of Books.

A Textbook of Legal Medicine and Toxicology. Edited by FREDERICK PETERSON, M.D., President of the New York State Commission in Lunacy, Clinical Professor of Psychiatry, Columbia University, New York; and WALTER S. HAINES, M.D., Professor of Chemistry, Pharmacy, and Toxicology in Rush Medical College, Chicago, Professorial Lecturer on Toxicology in the University of Chicago. In two volumes. London, Philadelphia, and New York: W. B. Saunders and Co. 1904. Vol. II. Pp. 825. Price 21s.

IN our review of the first volume of this textbook in THE LANCET of April 23rd, 1904, p. 1128, we explained the general scope and nature of the work and expressed our opinion that it promised to be one of the best treatises on medical jurisprudence in the English language. The second volume in every way maintains the high standard of its predecessor and the editors may rest well satisfied with the results of their labours.

The first article is occupied with a consideration of Malingering and the Feigned Disorders, by Dr. J. T. Eskridge and Dr. Leonard Freeman. The difficulties which beset the practitioner when he is called upon to differentiate between functional and organic disease are frequently great, still more so is this the case when possible fraud has to be contended with. In former times surgical diseases were more frequently feigned than they are at the present day, but attempted simulation of various nervous affections is common, either to excite sympathy or to obtain damages after receiving injuries more or less severe, such injuries being alleged to have been caused by the negligence of certain individuals. The investigation of such cases calls for the greatest circumspection on the part of the medical adviser. Especial stress is laid by the authors on feigned mental disorders, and the employment of tables comparing the symptoms in the true with those of the feigned disease considerably aids in drawing attention to the main points upon which a differential diagnosis may be made.

The next contribution is on the legal aspects of pregnancy and is written by Dr. W. A. Newman Dorland, who is also responsible for the following communication which is headed "Legitimacy, the Determination of Sex, Signs of Delivery." He carefully discusses many matters which are frequently the subjects of legal inquiry. The vexed question of the duration of pregnancy naturally receives full attention. Many notable cases have come before the courts in which it was of the utmost importance to the parties concerned to ascertain the extent to which pregnancy in the human female may be prolonged. Unfortunately there is no time that can be stated as the positive duration of pregnancy. Although about 280 days is generally accepted as the average, cases have been recorded in which this period has been considerably prolonged. One authority, von Winckel, maintains that in about 11 per cent. of pregnant women the duration of pregnancy is over 300 days, prolongation occurring from 302 to 322 days. In some countries the limit is laid down by law but in England no period is fixed and the whole matter has to be argued before the court in every case in which the question arises. In Dr. Dorland's communication much interesting information on this subject will be found, in addition to remarks on the determination of sex and on various medico-legal points connected with delivery.

The article on Criminal Abortion by Dr. E. P. Davis contains a full account of the methods which have been adopted to empty the pregnant uterus for an improper purpose and the symptoms and complications which may arise are accurately described. Dr. Davis also writes on infanticide. As is well known, this crime is alarmingly frequent. Moreover, it is a crime which is very difficult to prove. It rests with the prosecution to show that the infant had had an independent existence, for unless this can be done the prisoner cannot be found guilty of murder. The difficulties that may arise in attempting to show that the child was "born alive" in the strictly legal sense are well described by Dr. Davis. Unfortunately, there is a great want of unanimity amongst legal authorities as to what determines "live birth," consequently in many cases the prisoner is found "not guilty" of murder but is convicted on the charge of concealment of birth. A definite pronouncement based on medical rather than on legal grounds is earnestly to be desired.

The contributions on impotence and sterility, rape and unnatural offences are by Dr. C. G. Chaddock and are well up to the general standard of the work in clearness and completeness. The articles on venereal and genito-urinary diseases in their medico-legal relations, on marriage and divorce, on malpractice, on the medico-legal relations of the Rontgen or x rays, and on laws relating to the insane will all be found of interest, although the last-named will be of more value to American than to English readers.

The portion of the work dealing with toxicology is very full and complete. It commences with an article on the General Principles of Toxicology by Dr. W. S. Haines, in which directions are given for the detection and separation of poisons. Inorganic poisons are described by Dr. J. W. Holland. The chemical properties of the various minerals and their salts are first considered and then follow the symptoms produced by a poisonous dose, the treatment to be adopted, the post-mortem appearances, and the methods employed for the detection of the "noxious substances." The chemical tests are particularly well given. The organic poisons for purposes of description are divided into "alkaloidal" and "non-alkaloidal." The alkaloids are defined as the "main poisonous principles of plants" and their properties are discussed by Dr. A. B. Prescott. The non-alkaloidal organic poisons are considered by Dr. Reid Hunt and Dr. Walter Jones. Under this heading are included the various forms of alcohol, chloral hydrate, chloroform, the coal-tar series, and also preparations of various plants, such as digitalis, ergot, aloes, colocynth, pennyroyal, and many others.

Dr. C. A. Doremus describes the gaseous poisons, and an

account of food poisoning is given by Dr. C. Harrington. Dr. V. C. Vaughan contributes a few remarks on Ptomaines and other Bacterial Products in their Relation to Toxicology. It has been stated that the chemical tests and especially the colour reactions for certain vegetable alkaloids may be simulated so closely by the products of certain bacteria that it becomes difficult, if not impossible, to distinguish with certainty between them. If this statement be true the possibility of mistaking putrefactive substances for vegetable alkaloids should always be borne in mind in making medico-legal investigations. Dr. Vaughan proceeds to discuss these difficulties in a very able manner, laying stress on the tests for morphine, conine, strychnine, atropine, and others. He also makes some extremely interesting observations on the Post-mortem Imbibition of Poisons. Within recent years the question of the diffusion of poisons through the dead body has acquired importance largely on account of the fact that arsenic, corrosive sublimate, and other poisonous substances are used for the purpose of embalming bodies. Obviously a poison may be introduced into the body after death for the purpose of preserving it or with the intention of casting suspicion upon an innocent person, or to suggest suicide as the mode of death. The body being examined, the poison is found in various organs, and the question arises as to whether it obtained admission before or after death. Dr. Vaughan quotes several cases where this doubt arose and the medical evidence was therefore of the utmost importance.

Taking the textbook as a whole, we can thoroughly endorse the favourable view we formed after a perusal of the first volume. It forms a most valuable source of reference in all matters connected with medical jurisprudence and toxicology.

Lehrbuch der Kinderheilkunde. (Textbook of the Diseases of Children.) By Dr. BERNHARD BENDIX. Third revised and enlarged edition, with 12 illustrations. Berlin and Vienna: Urban and Schwarzenberg. 1903. Pp. 604. Price 12*s.* 6*d.*

THIS volume is the third edition of a work which was originally written by the author as a contribution to the series of handbooks on the subject of hygiene edited by Professor Uffelmann; with the death of the latter hygienist some ten years ago this series of handbooks came to an end, but Dr. Bernhard Bendix provided for the continuation of the work by bringing it out in the form of an independent textbook on the diseases of children. And it is in this form, though revised and enlarged, that we now have an opportunity of reviewing his work. The double revision to which it has been subjected since it constituted a part of the system of hygiene has deprived it of its original and special characteristics and has reduced it or, perhaps, to speak more accurately, has extended it to the conventional and familiar proportions assumed by modern textbooks which comprise the whole subject of the diseases of children.

We find no fault with the general arrangement and handling of the various subjects dealt with in this volume. We cannot help thinking, however, that more recent French, English, and American contributions to the literature of pediatrics have hardly received the acknowledgment to which their importance entitles them. For instance, in the account of the artificial methods of infant feeding, although the percentage method is described, Dr. Rotch's work is not mentioned; this is surely a considerable omission. Indeed, the whole section, which is devoted to questions of nutrition, is hardly up to the general level of excellence which characterises the greater portion of the volume. This is the more unexpected because Dr. Bendix is a well-known authority on the diseases of infants due to nutritional disturbances. Moreover, he has conducted some very interesting investigations on the subject of the essential pathology of athrepsia or simple atrophy, a disorder which represents one of the most pronounced types of malnutrition. In the section in which he described this little-understood disease he supplies a short *résumé* of his own investigations. According to his observations in a series of cases of primary atrophy examined by him it was found that from 72 to 85 per cent. of the normal quantity of nitrogenous elements was absorbed and utilised and as regards the fatty elements of food something like 50 per cent. of the normal quantity was assimilated. Deficient absorption of nitrogenous and fatty elements of food is not, according to the author's views, a sufficient explanation of the cause of athrepsia, and though in all cases there is clearly a deficient absorption, nevertheless the deficiency does not adequately explain the essential features of the disease. On the other hand, he believes that we may find an explanation of the condition in an abnormally rapid tissue combustion due to the absorption of poisonous products generated in the alimentary canal. Rapid tissue combustion combined with a somewhat deficient absorption might explain the progressive loss of weight in these cases. With regard to the rational treatment of cases of athrepsia the author insists that on the assumption that a normal infant should receive the equivalent of 120 calories per kilogramme of body-weight per diem, an atrophic infant should be supplied with only the equivalent of 100 calories and that conformably with its deficient powers of fat absorption this element of the food should be proportionately limited. Valuable as theoretical considerations and generalisations of this kind undoubtedly are, it is perhaps open to question whether in particular cases any advantage is gained by measuring an infant's food in heat equivalents; the personal "index of nutrition" or "co-efficiency of utilisation" is necessarily a very important factor in determining the physiological food requirements of any infant. These indices cannot be arrived at on theoretical considerations, they can only be estimated by personal observation. In other words, clinical experience and clinical acumen are absolutely necessary for conducting the management of these cases.

Although the practical value of Dr. Bendix's book may be detracted from by too strict an observance of theoretical considerations, nevertheless for teaching purposes it is perhaps no matter for regret that he lays so much stress on the accuracy of figures. As compared with other textbooks of the diseases of children written in the German language this new edition of Dr. Bendix's work is far more in accordance with our own ideas of what the arrangements and scope of such works ought to be. It is a book which is easy to read and very convenient for rapid reference.

Clinical Lectures on Mental Diseases. By T. S. CLOUSTON, M.D., F.R.C.P. Edin., Physician Superintendent of the Royal Edinburgh Asylum for the Insane; Lecturer on Mental Diseases in the University of Edinburgh. Sixth edition. London: J. and A. Churchill. 1904. Pp. 738. Price 14*s.* net.

SCIENTIFIC views regarding mental disease have recently been undergoing great changes in regard to the etiology and evolution of insanity, the clinical standpoint and the classification which should be adopted in accordance with the modern developments of knowledge, and the whole question of the relationship of insanity to mental and physical degeneracy and deterioration. Pathology is slowly adding her quota of discoveries to the obscure problem of the morbid processes which affect the brain and nervous system, while the rôle of toxæmic agents and micro-organisms in the production of mental disorder is being recognised and studied more and more. Dr. Clouston's clinical lectures are intended to give

the student a clear, concise, and graphic description of the typical forms and varieties of mental disease. Beginning with a description of cases of melancholia the various other psychoses are duly described—often in considerable detail as regards history and symptoms. The amount of information contained in these lectures is large and the mode of presentation of the clinical data is simple and suitable to the understanding of the beginner in psychological medicine. The older types and method of classification are adhered to throughout; this is, perhaps, inevitable in the sixth edition of a textbook of clinical lectures which embodies and reflects the teaching of 25 years ago. Since then, however, great strides and advances have been made and although in the preface generous acknowledgment is given to the remarkable achievements of the psychiatric school of Kraepelin and others, which has so profoundly influenced modern psychiatry, the standpoint and the spirit of the book reflect the old and not the new psychiatry. While this applies to the clinical portion of the work the pathological sections must be reserved for separate consideration. The character of the book as regards pathological drawings and reproductions of micro-photographs has been considerably advanced. The number of plates amount to 29, and of these 22 are devoted to micro-photographs and drawings illustrating various changes in the brain and its membranes and vessels in mental disease. While a few of these are of a fair average level of mediocrity some show a high degree of excellence in definition and detail of the morbid structures involved. For several of the best illustrations Dr. Clouston acknowledges his indebtedness to Dr. W. Ford Robertson, pathologist to the Scottish asylums.

Referring more particularly to the clinical part of the work the subject of Paranoia receives scant and sketchy treatment. This important affection is not presented with anything like adequacy even of outline, no clinical record of cases is given, and the reading of the account leaves us with but a hazy impression of what the author is trying to convey. Dementia præcox of the katatonic form, which has been so thoroughly investigated in the last decade by the German, French, and American school, is regarded as a "variety of stupor," a singular harking back to the old views of half a century ago. The scattered remarks and criticisms of the views of Kraepelin throughout these lectures show that Dr. Clouston has not, we think, grasped the full significance of that worker's remarkable discoveries in clinical psychiatry.

Dr. Clouston's lectures on the whole reflect the spirit, methods, and ways of clinical psychiatry of 25 years ago. An attempt to bring it thoroughly abreast of modern knowledge and to imbue it with the new spirit would involve re-writing or the production of a wholly new work. But his lectures retain their value for their pleasant and interesting style of teaching after the manner of the older school of psychiatry.

English Medicine in the Anglo-Saxon Times: being the FitzPatrick Lectures for 1903, delivered before the Royal College of Physicians of London on June 23rd and 25th, 1903. By JOSEPH FRANK PAYNE, M.D. Oxon. Oxford: The Clarendon Press. 1904. Pp. viii.—162. Price 8s. 6d. net.

DR. PAYNE is well known as one of the most learned of our medical antiquarians and he has chosen for the first of the FitzPatrick lectures a period of great interest to all the inhabitants of these islands although one of which the records are but scanty. "The drums and tramplings" which swept over these unhappy islands during the eighth and ninth centuries destroyed most of the books stored in the libraries of the time, and the existing medical MSS. of the Anglo-Saxon period number only about 20. Of these the most important is the Leech Book of Bald. Besides this Dr. Payne deals with the Anglo-Saxon translation of the Herbarium Apulcii Platonici and the treatise Peri Didaxeon, a translation into Anglo-Saxon from a Latin work by a writer of the school of Salerno. The only existing MS. of this work belongs to about the middle of the twelfth century. Dr. Payne further discusses Anglo-Saxon surgery together with sundry charms and considers that some of these may have survived to the present day. Some 35 years ago there was a shrew ash in Richmond Park growing almost opposite to the cottage in which Sir Richard Owen resided and a medical man, who was then a boy at school in East Sheen, tells us that he had been told by cottagers in the district that it "was a good thing for children to pass them through the split in the trunk." As the superstition of the shrew ash is not generally known it may be as well to state that the shrew was formerly supposed to be exceedingly venomous for its bite, whether in cattle or men, gave rise to painful suppurating swellings. Various remedies were extant for these swellings but the most potent was a shrew ash. This was an ash tree in which a hole had been bored. A live shrew was placed in the hole and the hole was then plugged. The virtues or venom of the shrew then passed into the tree and by a species of homœopathy the touch of the tree cured the injuries inflicted by the shrew. A later development, of course, assigned curative properties for disease other than that conected with the shrew, and as far as our informant remembers the ash mentioned above was used for the cure of whooping-cough, the trunk of the tree having been split and the children being passed through the cleft.

Dr. Payne's lectures may be confidently recommended to all those members of our profession who take an interest in the early history of their art, and the illustrations, which are reproductions of drawings by Miss E. A. Ibbs, give an additional charm to his work. The originals are to be found in various MSS. in the British Museum and are mostly from the Anglo-Saxon translation of the Herbarium of Apuleius.

LIBRARY TABLE.

Transactions of the Grant College Medical Society, Bombay from February, 1903, to March, 1904.—The report of a paper read by Dr. Raghavendra Row on the Serum Reaction of Bacillus Pestis in Plague, studied in the light of recent researches on immunity, makes interesting reading. He summarises as follows: 1. The lysogenic action of plague convalescent's blood on bacillus pestis is brought about by the combined action of two distinct bodies: (*a*) one of the nature of amboceptor (not destroyed by heat up to 56° C.); and (*b*) the other of the nature of complement (destroyed at 56° C.). 2. A serum from a plague convalescent loses its lysogenic action on bacillus pestis by age and exposure to light in a few days and in a few minutes by exposure to 56° C. (probably due to the destruction of complement). 3. This lost property is restored by a mixture of a fresh serum—e.g., from the rabbit (addition of complement). 4. Rabbits when suitably immunised to plague produce a serum rich in precipitins and containing a fair amount of bacteriolysin (to bacillus pestis). 5. By exposure to heat of 56° C. the bacteriolysin is rendered impotent (owing to destruction of complement); it is, however, to a certain extent restored by addition of fresh rabbit's blood serum (complement). 6. Roux's antipesteux serum is very rich in precipitin but not particularly bacteriolytic to bacillus pestis as such. 7. This loss of bacteriolytic property is probably due to age and is certainly produced by exposure to 56° C. (owing probably to loss of complement). 8. By addition of fresh rabbit's, man's, rat's, &c., fresh serum, however, the bacteriolytic property is restored (fresh complement). 9. Blood serum of patients dying from plague is deficient in amboceptor and its

complement is not only poor but of the nature of an anti-complement. At the August and November meetings of the same society Dr. K. M. Dubash read papers on a case of Abdominal Section for Ruptured Uterus and on Some Causes of Sterility and Some Points in its Cure in Women. In the former paper he drew special attention to the administration of ergot by midwives, dwelling on the disadvantages and risks of its administration until after the expulsion not only of the child but also of the placenta.

Nos. 3, 4, and 5 of the first volume of the "Calcutta Practitioner."—In the *Calcutta Practitioner* (March 1904), Dr. Gopal Chandra Chatterji, assistant bacteriologist, Pathological Laboratory, Calcutta Medical College, has a paper entitled "Some Researches on the Malaria Parasite and its Intermediary Host—the Anopheles." They are arranged as follows: (*a*) description of the several varieties of malaria parasites (with short notes of some cases in which they were found); (*b*) special study of flagellation of malignant tertian parasite in view of the recent theories put forward by Major A. Buchanan, I.M.S.; and (*c*) description of the varieties of anopheles found in and about Calcutta with an attempt to find out the malaria-bearing ones. In the same number is a good notice of the life of the well-known native scientist, Dr. Mahendra Lal Sircar, the founder of the Science Association in Calcutta and an eminent member of the University of Calcutta. The April number contains some interesting notes on Hydnocarpus Oil in Diabetes, Rheumatism, Chronic Skin Diseases, and Leprosy, by Dr. Hem Chandra Sen, teacher of materia medica, Campbell Medical School, Calcutta. This oil is one of the oldest known remedies employed as a domestic medicine by the natives. The writer says there is no remedy superior to it in the treatment of leprosy. In this issue and in the May number Dr. Suresh Chandra Bhattacharya, first demonstrator of anatomy, Medical College, Calcutta, has good papers on Some Obscure Forms of Joint Diseases and Diseases in the Neighbourhood of Joints.

Analytical Records
FROM
THE LANCET LABORATORY.

DIGITALONE.

(MESSRS. PARKE, DAVIS, AND CO., 111, QUEEN VICTORIA-STREET, LONDON, E.C.)

DIGITALONE is a clear brown fluid containing all the active principles of digitalis. Its strength is equal to one-tenth that of the fluid extract of digitalis or four-fifths that of the tincture, the hypodermic dose being from eight to 15 minims. Digitalone is aseptic and non-alcoholic but its most important property is that it is non-irritating and therefore is specially adapted for hypodermic use, whereas ordinary preparations of digitalis are not suitable for this purpose on account of the presence of spirit and extractives. Digitalone is adjusted to a definite standard by physiological assay.

KOLJE.

(MR. J. GRANT GLASS, 123, GILMORE-PLACE, EDINBURGH.)

Kolje is described as a peptonised pure calves'-feet jelly, prepared with extract of kola nut and other ingredients. Our analytical examination confirmed this description, as we found peptones to be abundant, while a small quantity of the alkaloid caffeine was successfully extracted. Analysis gave the following results: water, 83·64 per cent.; and solid matters, 16·36 per cent., including 0·33 per cent. of mineral matter. About three-fourths of the total solid matter consisted of peptonised albuminoid. There were indications of boric acid. The solid portions of "Kolje" are doubtless nutritious as well as stimulating but the relatively large amount of water obviously reduces the nutrient value of the preparation, considered in its entirety.

ARDENNESE MILK AND CREAM.

(HEYMANN, FRÈRES AND CO., BRUSSELS. AGENCY: JOUST VAN HEEL AND CO., 3, DENMAN-STREET, LONDON BRIDGE, S.E.)

These milk products are manufactured at Lamarcheville, near Chimay, Belgium. They both gave satisfactory results on analysis which proved also that they were free from preservatives. Moreover, the sterilising process employed evidently interferes very little with the natural flavour. The milk gave the following results on analysis: total solids, 12·24 per cent.; fat, 4·14 per cent.; and mineral matter, 0·82 per cent. This is good rich milk. The cream gave the following results: water, 56·91 per cent.; and total solids, 43·09 per cent. The latter consisted of fat, 36·74 per cent.; curd, &c., 5·96 per cent.; and mineral matter, 0·39 per cent. The cream possessed a good flavour and, as is evident, shows on analysis excellent qualities.

NEW "TABLOIDS," "SOLOIDS," AND OTHER PREPARATIONS.

(MESSRS. BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

Amongst new additions to the list of tabloids which we have recently received are the tabloid glycerophosphates compound containing the combined glycerophosphates of calcium, sodium, potassium, magnesium, and iron, with pepsine, diastase, ignitia, and kola equivalent to half a fluid drachm of syrup of glycerophosphates; tabloid ophthalmic of zinc sulphate and cocaine hydrochloride for use as a painless astringent in ophthalmic practice; and tabloid of iron and strychnine phosphates, each containing one grain of phosphate of iron and $\frac{1}{20}$nd of a grain of phosphate of strychnine. A very useful new "soloid" is that containing the double salt of iodide of mercury and potassium. It is an excellent means of securing the effects of mercury biniodide in solution. The soloid dissolves readily in water, yielding a reddish fluorescent solution which is sufficient to indicate the presence of a poison. We have received also specimens of the following preparations: morphine phosphate, described as a soluble, stable, and trustworthy salt which is preferable to the acetate; guaiacol camphorate, an acid salt of guaiacol and camphoric acid, used with favourable results in phthisis (the salt passes through the stomach without change and without gastric disturbance but in the alkaline secretions of the intestine guaiacol is liberated under conditions obviously favourable for its absorption); calcium hypophosphite, a readily soluble salt in water; and, lastly, podophyllin, prepared strictly in accordance with the official method from a carefully selected drug. This is practically soluble in 90 per cent. of alcohol and yields only one-fourth the amount of ash laid down in the B.P. test.

SCOTCH WHISKIES.

(MESSRS. GREENLEES BROTHERS, GLASGOW, AND 29 TO 31, COMMERCIAL-STREET, LONDON, E.)

We believe these whiskies to be described correctly and evidence is not wanting that they are well matured. We have taken for analysis four types selected from a list containing ten different descriptions of whisky. Lorne Highland whisky gave the following results on analysis: alcohol, by weight 42·29 per cent., by volume 49·81 per cent., equal to proof spirit 87·29 per cent.; extractives, 0·30 per cent.; and mineral matter a trace. The secondary products were as follows, given in grammes per 100 litres of alcohol present: acidity reckoned as acetic acid, 31·20; aldehyde, 25·00; furfural, 1·50; ethers reckoned as ethyl acetate, 38·72; and higher alcohols, 240·00. The feature of this analysis is that the furfural is decidedly lower than in many all-malt whiskies and the same observation applies to the proportion of ethers. The G. B. Special Scotch whisky gave the following results on analysis: alcohol, by weight 39·30 per cent., by volume 46·59 per

cent., equal to proof spirit 81·64 per cent.; extractives, 0·13 per cent.; and mineral matter, *nil*. The secondary products were as follows, given in grammes per 100 litres of absolute alcohol present: acidity reckoned as acetic acid, 60·00; aldehyde, 18·00; furfural, 3·55; ethers reckoned as ethyl acetate, 41·20; and higher alcohols, 160·00. This is an excellent, well-matured all-malt whisky. Antique Pure Highland whisky gave the following results on analysis: alcohol, by weight 41·80 per cent., by volume 49·29 per cent., equal to proof spirit 86·37 per cent.; extractives, 0·19 per cent.; and mineral matter, a trace. The secondary products were as follows given in grammes per 100 litres of absolute alcohol present: acidity reckoned as acetic acid, 46·00; aldehyde, 50·00; furfural, 3·00; ethers reckoned as ethyl acetate, 100·00; and higher alcohols, 160·00. The feature of this analysis is the high proportion of ethers and in this respect the spirit equals brandy. The result is evidence in favour of the whisky being accurately described as "antique." Claymore whisky gave the following results on analysis: alcohol, by weight 41·80 per cent., by volume 49·29 per cent., equal to proof spirit 86·37 per cent.; extractives, 0·14 per cent.; and mineral matter, *nil*. The secondary products, given in grammes per 100 litres of absolute alcohol present, were as follows: acidity reckoned as acetic acid, 31·20; aldehyde, 20·00; furfural, 1·80; ethers reckoned as ethyl acetate, 38·72; and higher alcohols, 140·00. These results do not coincide with those usually given by a spirit made exclusively from barley malt. It is, however, a whisky with a "clean" and delicate flavour. All these whiskies give evidence of being carefully prepared from good materials and they are pure in the sense that they are of good potable quality.

BRAX BREAD AND FLOUR.

(BRAX, LIMITED, NEEDHAM MARKET, SUFFOLK.)

Brax bread is a malted bread and therefore much of the starch has been reduced to a soluble condition. It contains further a very satisfactory proportion of proteids, amounting in the dry substance to 12·72 per cent. The mineral matter amounted to 0·78 per cent. Similarly Brax flour proved to contain 13·33 per cent. and 0·65 per cent. of proteid and mineral matter respectively. The bread has an excellent flavour and it readily yields to the action of digestive ferments. The microscope showed the practical absence of the irritating insoluble matters of wheat flour. The bread keeps moist and in good condition for several days longer than does the ordinary white loaf.

THE AIX-LA-CHAPELLE NATURAL PRODUCTS.

(THE AIX-LA-CHAPELLE NATURAL SPRING PRODUCTS, LIMITED, AGENCY, 24 AND 26, BASINGHALL-STREET, LONDON, E.C.)

The chief constituents of the Aix-la-Chapelle water are chloride of sodium and carbonate of sodium, whilst amongst the more important subsidiary constituents should be mentioned sulphide of sodium with traces of bromide and iodide of the same metal. Our analysis of the Aix-la-Chapelle natural water practically confirms the analysis which is officially published in Germany. We found the total saline contents to be 3·63 grammes per litre consisting in the dried residue of 2·86 grammes of common salt, 0·637 gramme of carbonate of soda, and 0·133 gramme of calcium carbonate. We have also examined specimens of bath salt and drinking salt obtained by the evaporation of the natural water. These are identical in composition with the salts contained in solution in the sample of water submitted to us. The salts consist, that is to say, of about three-fourths common salt and one-fourth carbonate of soda. It is suggested that by means of these salts equally beneficial results can be obtained by home treatment and therefore the journey to Aix-la-Chapelle can be dispensed with. It may be pointed out, however, that much of the benefit derived by taking a course of waters is due to the rest, change, and regular living which such a régime involves. Lastly, we have examined a specimen of soap containing a small proportion of the salts of Aix-la-Chapelle. We fail to see what advantage is obtained by mixing soap with a little bicarbonate of soda and salt, especially as the sulphides present in the natural water do not exist as such in the soap or in the evaporated salt but as sulphates. Sulphides in soap might possibly have a beneficial action on the skin.

PROVOST OAT BISCUIT.

(GRAY, DUNN, AND CO., KINNING PARK, GLASGOW.)

The oat is regarded as the most nutritious of all cereals. According to our analysis this biscuit contains 14·17 per cent. of proteid, which is about the maximum that oats give on analysis. The mineral matter amounted to 2·62 per cent. The biscuit is well made and possesses an excellent oaten flavour. It may be observed also that the oat contains nearly 10 per cent. of fat which, however, tends to become rancid. This objectionable tendency is apparently checked in the provost oat biscuit, as the flavour of the oat in it is preserved fresh.

MILO FOOD.

(HENRY NESTLÉ, 48, CANNON-STREET, AND 49, QUEEN VICTORIA-STREET, E.C.)

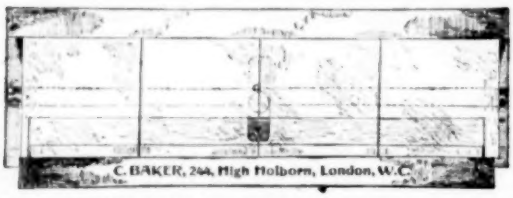
According to our analysis this is a malted cereal food with a basis of milk. Analysis shows a small proportion of unaltered starch, the carbohydrates consisting for the most part of malt sugar, milk sugar, cane sugar (added), and dextrin. The extent to which milk enters into the composition of the food may be judged from the total amount of proteid and of fat present. According to our analysis the former amounted to 14·08 per cent., in the latter to 7·00 per cent. 67 per cent. of the food proved to be soluble in cold water. Mineral matter amounted to 1·20 per cent. The preparation presents all the elements necessary in infant diet and the constituents are together in desirable proportion except, perhaps, that the percentage of fat might be increased with advantage and the carbohydrates spared in corresponding proportion. The food is very palatable and very readily prepared.

New Inventions.

ALL-METAL COVER-GLASS HOLDER.

DUE to the use of wood in their composition, some cover-glass holders offered for sale are liable to warp in hot climates; others are limited in their usefulness, being made to receive but one size cover-glass: while in another the worker is prevented from placing his specimens in an oven owing to the employment of indiarubber in its construction. In consequence of these drawbacks of other frames I have designed an *all-metal* holder capable of receiving any size cover-glasses between 15 and 26 millimetres, a sufficient range, probably, to meet the requirements of all workers. It has the following advantages: (1) it will receive glass covers of any size in general use; (2) being made entirely of metal it can be easily washed or sterilised; and (3) specimens requiring heat can be placed in an oven with the films in position without fear of ruining the holder. Square or oblong cover-glasses are recommended. Having used a cover-glass holder for some years I can endorse Major D. G. Marshall's remarks in THE LANCET of May 7th, 1904, p. 1288, as to the general advantages of such an instrument when making blood films—viz., no time is wasted choosing and picking up cover-glasses; the cover-glasses need never be fingered. When prepared the instrument can be wrapped in paper or dropped into a small metal box, contamination of the films by dust, &c., being thus avoided. The following are the directions for use. With the holder between the finger and thumb of the left hand the sliding bar is pulled with the right until the opening is a little wider than necessary. The cover-glasses are placed on the base-plate, the sliding

bar is brought into apposition with the covers, and the holder is prepared for taking a "spread." A small projecting pin at the end of the plate secures the covers from sliding off. The groove along the centre of the base-plate



will enable the operator to remove the cover-glasses easily by means of forceps.

Messrs. C. Baker of 244, High Holborn, London, W.C., supply the holder.

Pakhoi, South China. EDWARD HORDER, F.R.C.S. Edin.

ASYLUM REPORTS.

Royal Edinburgh Asylum (Annual Report for 1903).—The average number of patients resident during the year was 917, comprising 460 males and 457 females. The admissions during the year amounted to 411—viz., 196 males and 215 females. Of these 334 were first admissions. Dr. T. S. Clouston, the medical superintendent, states in his report that the number of admissions was large and it would have been much larger had it been possible to admit those who applied as private patients at the lower rates of board. Looking at the admissions generally "from a medical point of view there was an unusual number of aged and broken-down people—one patriarch was 98. There was a very large number of cases suffering from general paralysis ..... and the number of alcoholics was *excessive to a degree unprecedented in our history.*" The number of patients discharged as recovered during the year amounted to 145—viz., 67 males and 78 females, or 15·8 per cent. of the average number resident. The deaths during the year amounted to 119, or 13 per cent. as calculated on the same basis. Of the deaths four were due to cardiac disease, eight each to cerebral hæmorrhage and pneumonia, 16 to pulmonary and other forms of tuberculosis, 23 to senile decay, 38 to general paralysis of the insane, and the rest to other causes. Reviewing the history of the last three decades in the work of the Royal Edinburgh Asylum, Dr. Clouston states that in the year 1873 there were 583 pauper patients in the asylum chargeable to Edinburgh and Leith. This was a proportion of cases of lunacy of 1 to every 413 of the general population of this area. In 1883 the proportion of lunatics continued at 1 to 413. In the year 1893 there were 877 patients drawn from the same area, or 1 to 379 of the population, and in 1903 the number of patients was 1248, or 1 to every 315 of the population. For the whole of Scotland the proportion of the lunacy population to the general population was 1 to 371 in 1893 and 1 to 320 in 1903. The increase of lunacy during the last three decades is partly, says Dr. Clouston, due to an increase of certain forms of mental disease, such as general paralysis and alcoholic insanity, and to the increasing facility with which the public avail themselves at the present day of asylum care and treatment. In the five years 1873 to 1877 the percentage of alcoholic cases in the asylum was 18·5 for males and 10·4 per cent. for females; it has steadily gone up and now it has doubled. No explanation will account for this, says Dr. Clouston, but the one that certain classes of our population are drinking to greater excess than they did, and in doing so are, many of them, destroying their sanity. ..... This is also confirmed by the increased drink bill of the empire and the increasing police arrests for the smaller offences connected with drunkenness." The Commissioners in Lunacy report very favourably on the administration of the asylum and on the care and attention bestowed on the inmates.

West Sussex County Asylum, Chichester (Annual Report for 1903).—The average number of patients resident during the year was 695, comprising 306 males and 389 females. The admissions during the year amounted to 151—viz., 75 males and 76 females. Of these, 123 were first admissions. Mr. H. A. Kidd, the medical superintendent, states in his report that a number of applications for the admission of private patients have had to be declined owing to the lack of special accommodation. The admissions during the year were of a distinctly unfavourable character, only one-fifth of the whole number being deemed recoverable. Four males and five females were actively suicidal on admission. Hereditary predisposition to insanity was ascertained to exist in 42 per cent. of the cases and was present in half the cases in which any history at all was obtainable. One-fourth of the admissions had had previous attacks of insanity. These two causes, says Mr. Kidd, "constitute the predisposing factors of attack. The precipitating factors include the so-called moral causes, assigned in 20 cases, and the physical causes, of which the principal are alcoholic excess (24 cases), senile decay (15 cases), and epilepsy (11 cases)." Congenital mental deficiency was present in 13 admissions. The number of patients discharged as recovered during the year amounted to 47—viz., 24 males and 23 females, or 6·8 per cent. of the average number resident. The deaths during the year amounted to 59, or 8·5 per cent. as calculated on the same basis. Of the deaths one was due to senile decay, two each were due to epilepsy and cerebral hæmorrhage, five each to cancer and general paralysis, six to cardiac disease, ten to pulmonary and other forms of tuberculosis, 22 to organic disease of the brain, and the rest to other causes. Necropsies were made in all cases of death but three. Two inquests were held during the year—the first, on June 5th, upon a senile dement who sustained an accidental fracture of the ribs and died from subsequent pneumonia, and the second, on Oct. 22nd, upon a suicidal patient, a man who was admitted with a seriously cut throat, from the effects of which he died eight days afterwards. With the exception of a severe epidemic of influenza during the early months of the year the general health of the patients and staff had been good. The epidemic of influenza affected 100 patients and though not so extensive as last year (when the number of patients affected was about 200) it was of a serious nature and caused two deaths. "The epidemic was at first of the gastro-intestinal type, and having regard to this and to its origin amongst the farm staff it was considered necessary to sterilise all the milk-supply. This had a good effect, for the epidemic abated and the type of subsequent cases was of the ordinary myalgic character." The Commissioners in Lunacy state in their report that the asylum was found to be maintained throughout in the best of order, that the day-rooms were bright and comfortable in appearance and plentifully supplied with flowers and objects of interest, that the condition of the dormitories and bedding was quite satisfactory, and that the patients were neat, tidy, and well behaved. The committee of management states in its report that improvements are being carried out in the laundry department and that increased provision for dealing with outbreaks of fire has been made. Additional means of exit in case of fire have also been provided for the nurses' block.

NORTH DEVON INFIRMARY, BARNSTAPLE.—The annual meeting of the governors of this institution was held on August 16th. The medical report stated that 840 in-patients were admitted during 1903, against 668 in 1902, while the out-patients numbered 3032 against 2541 in the previous year. The financial statement showed that the expenditure had exceeded the income by £525, £1057 had been received from legacies, and the Hospital Sunday collections amounted to £370, being slightly less than in the preceding year.

VACCINATION STATISTICS.—At the meeting of the Bristol board of guardians held on August 13th it was reported that 4575 births were registered from July to December, 1903, and that of these children 2890 were successfully vaccinated, 106 had exemption certificates, and 16 were insusceptible to vaccination.—At the meeting of the Axbridge (Somerset) board of guardians held on August 16th it was stated that 490 births were registered in the districts of the union during the half-year ended December, 1903, and that of these children 289 were successfully vaccinated, 98 had exemption certificates, and one was insusceptible to vaccination.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT OXFORD.

THE SECTIONS.

PSYCHOLOGICAL MEDICINE.

FRIDAY, JULY 29TH.

Mr. CONOLLY NORMAN (Richmond District Asylum, Dublin) read a paper on

Dementia Præcox, or the Premature Dementia of Adolescents.

The existence, he said, of a single large and distinctive group of mental diseases which comprised three such varying and different mental disorders as those known under the names of hebephrenia, katatonia, and paranoid dementia præcox could be only admitted under conditions that satisfied modern tests as to what constituted disease. The only connecting links, added Mr. Norman, which existed among these three affections named were their origin and occurrence at the age of puberty and adolescence (between the fifteenth and the twenty-fifth years of life) and their decided tendency to early termination in dementia. With regard, however, to their origin at the epoch of puberty and adolescence the peculiarities exhibited by these three insanities were largely explicable as exaggerations and morbid perversions of psychological characteristics and tendencies proper to this epoch of life, modified or distorted by disease. As regards the alleged early and strong tendency to dementia in these cases the statement was, said Mr. Norman, open to correction, since a considerable minority of cases of so-called dementia præcox recovered. Moreover, no definite or distinct organic degenerative changes, he continued, had been demonstrated post mortem in cases of dementia præcox, the changes described by a few authors (to whom he referred) being of a casual nature and even hypothetical. No thorough investigation, based on modern methods of histological technique, had been made on the pathology of dementia præcox, and until such evidence was forthcoming it was well to hold their judgment in suspension and to cease from applying to it the term dementia. It was, however, he urged, true that adolescent cases of insanity not recovering had a special liability to run into a peculiar form of dementia. In cases of dementia præcox there was an incoördination or "ataxy" of the mind, not a paresis or paralysis such as occurred in the case of general paralysis and which alone deserved the name of true dementia. The dementia of adolescent insanity supervened at the termination of an attack or attacks of mental disorder of very varying character, marked by phases and mixed conditions of excitement, shallow depression, cataleptiform attitudes and poses, stuporous attacks with negativism and resistiveness to everything required to be done by the patient, and other symptoms indicating the occurrence of hallucinatory mental confusion. Therefore, he said, dementia was a faulty term to apply to cases of this class. Moreover, to call anything precocious because it occurred in early life "was a perversion of terms, for precocious implied too early arrival at an inevitable end." Moreover, the curability of a small percentage of cases of dementia præcox forbade them to use the term dementia—a name which encouraged despair. The term insanity of adolescence was free from such objection, it committed them to no views of its prognosis, and was therefore the more suitable word to use. In saying this he did not wish to disparage the splendid work done by various psychiatrists of France, Germany, and America, but he could not (while admitting their facts and descriptions) accept everything in their terminology.

Dr. W. R. DAWSON (Dublin) considered it undesirable to group the diseases in question under the term dementia præcox since hebephrenia was often a curable affection, and in view of the age of some cases the term præcox could not be applied as the equivalent of "youthful." He thought that a simple classification solely for teaching purposes was the only admissible one—a classification like that of the time-honoured scheme which divided mental diseases into mania, melancholia, idiocy and allied conditions, and dementia. The absence of any real knowledge of the pathology of dementia præcox stood in the way of their accepting, or refusing at present to accept, its claims as a nosological entity.

Dr. ERNEST W. WHITE (City of London Asylum, Dartford) preferred the term "premature dementia" as a title for the mental decadence occurring between the limits of puberty and adolescence. During the last few years their terminology had been so saturated by the fertile brains of the continent that there was a plethora of titles. He had seen many cases of premature dementia, both of the so-called paranoic and hebephrenic varieties, during the past ten years among the better educated and highly strung patients of the "private" class, whereas among the pauper or rate-paid class of patients this affection was less common and in asylums which drew their inmates from agricultural districts such cases were rarer still.

Dr. W. KÖNIG (Berlin) stated that his clinical experience was in harmony with that of Dr. White. There was undoubtedly a distinct class of cases which could be conveniently termed dementia præcox. Some of these were congenitally weak-minded; a greater percentage, however, exhibited a normal state of intelligence. Regarding the prognosis he never ventured to give a definite opinion before one or two years of observation of the patient. He had never seen a case permanently recover.

Dr. DAVID BOWER (Bedford) expressed general agreement with the views of the previous speakers. He regretted that nothing had as yet been discovered to make the diagnosis of the disease certain until incurability set in from lapse of time.

Dr. G. E. SHUTTLEWORTH (Richmond) said that dementia præcox was very rare in the class of patients—feeble-minded children under the London County Council—with which he had to deal; he had met only a single case which exhibited the classical symptoms of hebephrenia and who was a member of a highly neurotic family. He agreed with what was laid down by the late Dr. Langdon-Down, that such cases exhibited an innate tendency to mental defect and deterioration at the developmental or adolescent period of life.

Dr. W. LLOYD ANDRIEZEN (London) said that on the whole he supported the use of the term dementia præcox, understanding by it the premature dementia which occurred in pubescence and adolescence, which was typical of that epoch of life and which had a definite basis of dementia on which were variously superposed disturbances of the nature of mental confusion and hallucinations. While having remote affinities with recurrent mania and still more remote affinities with paranoia it was conducive to clearness of ideas and, indeed, consonant with facts of clinical and general psychiatry to keep the class of dementia præcox by itself. Although externally rather ill-defined (and what group of insanity had not "straggling" cases resembling neighbouring groups?) the cases of dementia præcox aggregated well and distinctively under five "centres of condensation," so to speak; he thus recognised a simple, a hebephrenic, a katatonic, a paranoid, and a criminal form of dementia præcox, but he would not refer in detail to these as he had made that the subject of a paper published by himself about a year ago.

Dr. T. SEYMOUR TUKE (London) said that he could not accept the term dementia præcox though he accepted the group of diseases which it connoted. He preferred the term adolescent insanity.

Dr. E. S. PASMORE (Croydon Asylum) accepted the use of the term dementia præcox as concise and convenient, and said that although in a sense it was used to hide their ignorance, no better term was before them. He had often found on inquiry into the history of cases that they had suffered earlier in life from "fits" and obscure attacks of nervous excitement or breakdown, and hoped that in time they would discover the physical basis of this disease.

A paper was then read by Dr. PASMORE on

How to Take a Family History.

The paper pointed out the kind of details and data to be collected so that the physician could tabulate in the form of a diagram a record of the mental state of the ancestors, descendants, and collaterals of the patient. At present, he said, there was not in our public asylums any regular system or rule by which an accurate and trustworthy family history could be taken. The diagrams which he had drawn up for his own studies and which he passed round showed clearly how this could be done. The family history for three generations could thus be given in the diagram, but, said

Dr. Pasmore, it was useless to enlarge the scope of this aspect of the diagram since history of a trustworthy character could not be obtained beyond three generations.

Dr. A. T. SCHOFIELD (London) read a paper on

The Cure of Quackery.

The quack, he said, flourished in every land where he was safe from the law so long as he did not infringe the technical part—the "letter," so to speak—of the law. The gullibility of human beings and the hope which sprang "eternal in the human breast" were two chords on which the quack played. Quacks cultivated methods and means of treatment which made a deep impression on ignorant persons; they cultivated and exercised also their powers of mental "suggestion" on patients. He thought that physicians should themselves pay greater attention to the mental factor in disease and, above all, to the operations, obscure, it was true, but nevertheless potent, of the "unconscious mind" in helping the cure of disease.

A few brief remarks from Dr. F. W. EDRIDGE-GREEN (London), Mr. JAMES STEWART (Bristol), and Mr. G. STEVENS POPE (Middlesbrough) followed the paper, after which the proceedings were brought to a close.

LARYNGOLOGY AND OTOLOGY.

THURSDAY, JULY 28TH.

A discussion on

The Etiology, Treatment, and Prognosis of Innocent Growths of the Larynx

was opened by Dr. J. DUNDAS GRANT (London) and Professor A. ROSENBERG (Berlin).

Dr. DUNDAS GRANT in opening the subject limited himself to non-malignant growths found in the interior of the larynx. Many growths in the larynx, he said, were so closely related to inflammatory products that they could not be distinguished from them and, indeed, were identical with them in their anatomical structure. Their diversity depended mainly upon which elements in the composite structure of the laryngeal mucous membrane were chiefly affected. Amongst the commonest growths in the larynx were found papillomata (pachydermia verrucosa) essentially identical with the pachydermia found in its most typical forms on the vocal processes and in the interarytenoid space. Such growths as fibromata, fibro-papillomata, fibro-adenomata, cysts, and angeiomata were also explicable as the result of inflammatory conditions. Those parts of the vocal cord which underwent the greatest amount of mutual concussion and attrition, such as the junction of the anterior and middle thirds (the most frequent nodal point during phonation), the vocal processes, and the interarytenoid space, would seem to be most liable to chronic inflammatory and neoplastic changes. In the interarytenoid space the result was a diffuse thickening (pachydermia) at the vocal process (the typical pachydermic nodule). At the junction of the anterior and middle thirds of the cords there might be a "singer's nodule" consisting of a simple epithelial thickening (a miniature corn), a smaller or larger papilloma generally of soft consistence, or a sessile or pendulous œdematous fibroma which might exceptionally contain glandular structure. The chief causes of irritation of the larynx were over-use, or wrong use, of the voice and irritating vapours or dusty atmosphere; excess in tobacco smoke (especially inhalation of cigarette smoke) might also be quoted. Nasal obstruction leading to mouth breathing or purulent nasal discharges inhaled into the larynx were among the most potent contributories. Speaking of the prognosis of innocent laryngeal growths, Dr. Grant said that was dependent mainly upon their accessibility for removal and the possibility of avoidance of the predisposing and exciting causes. If not removed their tendency was to increase of growth, leading to fatal obstruction to respiration. Spontaneous disappearance was possible in the case of papillomata but could not be counted upon. After operation recurrence was possible unless the removal was complete. Dr. Grant's experience led him to the view that single pedunculated growths at the anterior commissure were unlikely to recur, whereas sessile ones at the junction of the anterior and middle thirds of the vocal cord were very likely to do so, as also were multiple papillomata. The question of malignant transformation of benign growths, he said, could not be left unconsidered. Practically it only arose in connexion with papillomata which, in exposed parts of the body, had a tendency under repeated or continued irritation to develop into epitheliomata. There was no reason for immunity on the part of the larynx, but the result of Semon's collective investigation seemed convincing as to its extreme rarity. Speaking of the treatment Dr. Grant said that this was not necessarily always operative. The avoidance of exciting and predisposing causes—for example, complete silence or limitation of the voice to a whisper for several months—was sometimes sufficient in cases of very small nodules due to over-use or misuse of the voice. In other growths removal was the only treatment and it should be carried out *per vias naturales*. The form of instrument employed varied with the special experience of the operator. For the destruction of the stump various caustics had been employed, such as nitrate of silver, formalin, chromic acid, tri-chloracetic or salicylic acid; the last-named was, in Dr. Grant's opinion, particularly valuable for papillomata. Recent experience had impressed him very favourably with the value and practicability of the fine galvano-cautery point. The distance from the dorsum of the tongue to the vocal cord was sometimes very considerable and beyond the reach of ordinary laryngeal forceps—fully four inches. In such a case he had eradicated a papilloma of the size of a split pea by a few touches of the fine galvano-cautery point. In considering the question whether any circumstances would call for removal of non-malignant intralaryngeal growths by external operation, Dr. Grant said that certainly the cases in which it was justifiable were extremely few with growths on the inner aspect of the framework of the larynx. When, however, all endolaryngeal methods in the most skilled hand available had failed or the size or vascularity of the tumour made intralaryngeal measures impracticable external methods were called for. Tracheotomy might be practised in children with papillomata who might not be amenable to endolaryngeal treatment, more especially if breathing were obstructed, in the hope that spontaneous disappearance of the growth might take place. Tracheotomy was also useful for the removal of a growth so low in the larynx as to be beyond the reach of intralaryngeal instruments.

Professor ROSENBERG in his introductory paper briefly referred to the rare cases in which before the invention of the laryngoscope laryngeal tumours had been removed through the mouth, also to the instances in which a polypus had been spontaneously expelled by coughing, and to the occasional spontaneous disappearance of papillomata following an exanthematous disease. On the other hand, he had never observed spontaneous cure of a laryngeal growth, as had Lennox Browne and others, after the removal of a nasal obstruction. He had noticed no special benefit from inhalations, insufflations, and injections. At the same time in inflammatory nodules, as also in cases of the so-called singers' nodules, he considered that something might be said for astringent treatment, but it remained an open question how far recovery was due to the simultaneous sparing of the voice. On the whole, however, the only right treatment for endolaryngeal tumours, he said, was operation and all laryngologists were agreed that with benign tumours the endolaryngeal method must in the first place, and almost always, be adopted. When dyspnœa threatened, or there was good reason to fear that the endolaryngeal interference would produce so much swelling of the mucous membrane as to cause serious dyspnœa, or when an operation *per vias naturales* might not have the desired result an external operation at the very outset was necessary. If tracheotomy were not imperatively required treatment should always be carried out by the natural passages. The introduction of cocaine into laryngology was a great advance, because by the use of this anæsthetic it was possible to remove a laryngeal tumour without much inconvenience to the patient. On the other hand, against this advantage there was the drawback that the vocal cord to which the polypus was attached became lax and did not become tightened by reflex stimulation and so might be torn away to a certain extent, with the new growth by the less experienced hand. General anæsthesia in adults was only necessary in the very exceptional cases of extreme reflex irritability or nervousness. In children general anæsthesia was often necessary. In the course of more than 20 years' practice he had only once been obliged to use general anæsthesia in an adult. The anæsthesia should not be deep, otherwise the patient, who was in the sitting posture, became limp and would not be maintained in a suitable position and, further, the copious secretion of saliva covered the mirror and if a severe hæmorrhage occurred the blood would be

inspired. It was necessary also to cocainise the larynx, as in the slighter degree of anæsthesia the reflexes were not completely abolished. Professor Rosenberg referred to the special difficulty in treating papilloma in children owing to their refusal to permit the use of the laryngoscope, and in referring to intubation he pointed out the possible risk of dissemination of the growth. With regard to endolaryngeal instruments he expressed a preference for the cutting curette and exhibited one which he had had constructed. It was made on the Landgraf principle but its blade had a straight shank, so that when it was applied to the edge of the vocal cord all that was above it could be removed with one cut, cleanly and evenly. With this instrument he had removed entire singer's nodules and broad flat tumours projecting only a little beyond the edge of the vocal cord on which forceps slipped easily. Professor Rosenberg mentioned the use of snares for the removal of papillomata. They were especially useful when a large tumour with a relatively thin pedicle had to be removed. With a view of combining the character of the snare with the usefulness of a cutting instrument he had designed a laryngeal snare on the principle of Jaenicke's snare. It was possible with this snare, after it was drawn together, by simply pushing forward the slide to push the snare out again, to catch the tumour in it, and to cut it off clean. The snare receded into a sharp-edged slip in the front part of the snare shaft in such way that the tumour was retained within the snare. He then briefly discussed the treatment of amyloid, lipomatous, myxomatous, and adenomatous growths, of tumours of thyroid origin, and of angeiomata. He considered that the treatment of cavernous angeioma of the larynx *per vias naturales* should not be attempted. He had observed one such broad-based tumour which bled freely when touched gently so that he gave up the idea of treating it even with the galvano-cautery.

In the general discussion which followed

Dr. ADOLPH BRONNER (Bradford) inquired whether formalin had been found successful in the treatment of papillomata.

Dr. N. C. HARING (Manchester) referred to laryngeal growths secondary to, or associated with, nasal lesions. The combination of adrenalin with cocaine he had found useful as a local anæsthetic in the removal of growths from the cords.

Dr. GREVILLE MACDONALD (London) had not observed spontaneous disappearance of papillomata; recurrence had followed the subsidence of small growths. He had been struck with the rapidity of recurrence during the removal of papillomata, the rate of growth appearing to be in excess of that prior to commencing their removal. Operative treatment, he considered, should be placed before the use of caustics. Thyrotomy had the disadvantage of a tendency to be followed by impairment of the voice, whereas no harm resulted from the use of forceps. He was opposed to any external operation for the removal of papillomata in children. The use of snares was attended with the risk of the growth dropping in the trachea.

Dr. P. WATSON WILLIAMS (Bristol) regarded "singers' nodules" as inflammatory in origin, and rest of the voice, *per se*, as the most potent remedy.

Dr. STCLAIR THOMSON (London) was opposed to the use of snares and in favour of Mackenzie's forceps for the removal of growths.

Dr. PRICE-BROWN (Toronto) had found adenoids to be present in all children with papillomata in the larynx. He regarded climate as a determining factor, the papillomata subsiding in a dry climate.

Dr. B. H. SCANES SPICER (London), Dr. HERBERT TILLEY (London), Mr. E. B. WAGGETT (London), and Mr. H. B. ROBINSON (London) also took part in the discussion.

The PRESIDENT (Mr. CHARTERS J. SYMONDS, London) summed up the discussion and observed that all were agreed upon the usefulness of endolaryngeal operations.

Dr. DUNDAS GRANT replied.

Dr. ALBERT A. GRAY (Glasgow) gave a

Demonstration of Macroscopic and Microscopic Preparations of the Human Membranous Labyrinth prepared by a New Method.

The microscopic preparations included sections of the human cochlea and of that of the guinea-pig, the mole, and the white mouse.

Dr. BRONNER read a paper on

The Treatment of Non-suppurative Catarrh of the Middle Ear by the Local Application of Remedies with Nebuliser and Compressed Air Apparatus.

Dr. Bronner considered that the use of Politzer's bag was often harmful and that the proper way to use the catheter was not to blow into it with a Politzer's bag but to use Lucae's double bag. With this a continuous current of air could be kept up and the pressure regulated; better still was the large compressed air apparatus as used in America. By this method the immediate result obtained was not only greater than after the use of Politzer's bag but more permanent and the diseased mucous membrane of the Eustachian tube was treated at the same time.

Dr. THOMAS BARR (Glasgow) was in favour of Politzerisation when done efficiently as seen by inspection. Auscultation was not quite trustworthy as a test.

Dr. L. HEMINGTON PEGLER (London) considered that Dr. Bronner's apparatus replaced the bougie.

Dr. SCANES SPICER inquired whether it was correct that the drum had been ruptured with this compressed air apparatus.

Dr. DONNELLAN (Philadelphia) and Mr. GEORGE JACKSON (Plymouth) also took part in the discussion.

Dr. WILLIAM MILLIGAN (Manchester) read a paper upon

Ménière's Disease and its Operative Treatment.

Mr. L. A. LAWRENCE (London) gave

Notes on a Case of Mastoid Abscess Five Weeks after Measles; Operation; Immediate Recovery.

The case was brought forward on account of the following interesting points. The abscess developed in a girl, aged five years, in little more than a fortnight. As far as it was possible to ascertain no previous disease of the ear had existed. There was never any complaint of pain, notwithstanding that this was the first time the child had had suppurative middle-ear disease. There was no pain complained of on palpation over the mastoid. There was only very slight raising of the temperature. No granulations were present in the ear and careful examination in the cavity of the mastoid did not reveal any. The treatment adopted was Wilde's own method; it was not proposed with any other idea than that of letting out pus, certainly not with any belief that the cure which followed would have resulted from such a simple proceeding, the case being well within a fortnight.

Dr. W. S. SYME (Glasgow) communicated

A Case of Congenital Word Deafness.

The patient was a boy, aged nine years, fully grown, healthy, and cheerful. The history was that he had never spoken and that he did not appear to understand when he was spoken to, and yet he was not deaf, because he heard music and was frequently observed to hum tunes which he had heard played and to hear at once when, for instance, a street organ was in the neighbourhood. Except for the defect referred to there was nothing to suggest lack of average intelligence. On examination the tonsils were found to be enlarged and a mass of adenoids was felt in the nasal cavity. The tympanic membranes were retracted. There were no other signs of previous ear disease nor was there anything in his personal history or in that of his family to suggest intracranial disease. After removal of the tonsils and adenoids his hearing power was not appreciably altered. It was impossible to obtain trustworthy results by examination with a watch or tuning-fork. When made to watch the lips of the person speaking he attempted to repeat the sound of the words. If his eyes were covered he still attempted to repeat what was said to him, getting usually the number of the syllables but not the words themselves.

FRIDAY, JULY 29TH.

Dr. GREVILLE MACDONALD and Dr. SAMUEL WEST (London) opened a discussion on

Intranasal Disease as a Determining Factor in the Production of Laryngeal and Pulmonary Affections.

Dr. MACDONALD, after referring to the unsatisfactory condition of a subject where the conflict of clinical facts, the contradictory opinions deduced by authorities, and the small help afforded by the physiologists precluded the possibility of establishing a scientific basis for future investigation, offered a working generalisation which might be a step towards the establishment of a definite law.

The speaker dealt with his own observations and divided his cases into three classes: (1) those pointing to the cure or relief of asthma by removing obstruction to easy breathing, or obstruction causing pressure; (2) those where the treatment of any other sort of abnormality in the nose was similarly successful; and (3) those where the mere cauterisation of the mucous membrane in a healthy nose resulted in relief or cure. These three classes were then discussed *seriatim*. In the first, the most favourable forms of obstruction were, first, anterior hypertrophy of the inferior turbinals; second, septal spurs and deviations; third, adenoids; and lastly, polypus. In the second class were found general œdema of the mucous membrane, especially when associated with excessive sneezing, frequently also with chronic bronchitic asthma. Not infrequently the cure of these cases was effected by the electric cautery. Atrophic rhinitis might also be responsible for asthma and the amelioration of the nasal condition might result in cure of the bronchial symptoms. In the third class were placed the cases in which frequent relief and even cure of asthma resulted from the mere cauterisation of the mucous membrane covering the upper part of the triangular cartilage in perfectly healthy noses. So far the clinical facts of the association of the nose with asthma were obvious enough. But they were further emphasised by the observation that occasionally the removal of polypus sometimes originated for the first time the onset of asthma. Passing to his generalisation, Dr. MacDonald invited attention to three points of collateral evidence (1) that whenever a patient complained of frequent and severe cold-taking and any abnormalities whatever were found in the nose, they could almost promise to cure the cold-taking by curing the nasal abnormality; (2) that whenever a patient complained of paroxysmal sneezing, whether of daily attack or of longer interval, they were tolerably sure of curing him by correcting the nasal disease or malformation; and (3) that a patient with polypus, less often with other form of obstruction, sometimes took cold, often severely, in the form of rhinitis, laryngitis, or bronchitis, after the removal of the obstruction. Probably the sudden exposure of a protected mucous membrane to cold air accounted for each of these accidents as well as the asthma. Remembering these three points, which would be conceded by many observers, Dr. MacDonald said that this generalisation might be formulated. Any treatment that allayed the irritability of the membrane—whether by operation and the ventilating of abnormally protected areas of mucous membrane, or by hardening the hyperæsthetic areas with the electric cautery, or by the exhibition of such local remedies as cocaine,—might modify or arrest the onset of catarrhal attacks, whether they manifested themselves in symptoms of sneezing, laryngitis, bronchitis, or asthma.

Dr. WEST, in introducing the subject, said the affections of the nose which were associated with respiratory difficulties fell into three groups: (1) *obstructive*, where there was mechanical interference with the free passage of air through the nose; (2) *infective*, where inflammatory or infective processes were set up in the respiratory organs by infection from the nose; and (3) *irritative*, where the respiratory condition was of reflex origin excited by irritation within the nose. Speaking of the obstructive group he said that mechanical obstruction in the nasal passages did not of itself cause any respiratory affection unless it were associated, as occasionally happened in children, with adenoids and enlarged tonsils, then deformities might be produced in the thorax such as pigeon breast or Harrison's furrow. What nasal obstruction must of necessity cause was mouth breathing; the air was then not warmed and filtered as it would be in the nasal passages, so that the mouth and pharynx became dry and irritable and chronic pharyngitis was almost the inevitable result. Besides this the parts were prepared for infection. Regarding the infective group, when the mouth and pharynx were moist and when the mouth and tongue were continually washed with saliva, the germs which gained access in the air inspired were got rid of, or at any rate were not likely to grow. But when the breathing was through the mouth the coating which formed upon the tongue, though chiefly made up of dried secretion and cells, teemed with germs of all kinds. If among these there were pathogenic organisms—e.g., the pneumococcus—very serious infection of the air passages and lungs might follow. Thus mouth breathing greatly increased the risk of infection of the air passages. If this danger were more often thought of in the specific fevers, especially of childhood, the frequency of pneumonia and bronchitis, he believed, would be greatly reduced. When there was actually any infective condition in the nose infection, he said, was very likely to spread directly to the neighbouring parts. Nasal diphtheria presented the most obvious and striking example. But so gross an infection as diphtheria was not required to illustrate this fact. Nothing was more common than for simple catarrh to commence in the nose and extend to the pharynx and even to the respiratory organs. Such was the history commonly given by patients of their chest colds. They described the sequence of events graphically and said that their colds always began the same way, starting in the nose, and then spreading to the chest. What was more, these catarrhs might be stopped by antiseptic washes to the mouth and pharynx so that the line of extension was cut, or better still, of course, by the removal of the source of infection from the nasal cavity. Passing to the irritative or reflex group Dr. West said it was by far the most interesting in relation to the respiratory neuroses. Cough, often paroxysmal in character, was common with affections of the nose as it was with those of the throat. Another affection which naturally suggested itself was paroxysmal sneezing. Besides these there were various subjective sensations to which nasal affections gave rise—e.g., sensations of tightness in the chest or shortness of breath or even dyspnœa. All these conditions might stand in some relation to asthma but they were not of themselves asthma, or even necessarily asthmatic phenomena, as they had been called. Of the relation in which asthma stood to intranasal disease much, he said, had been written of late years. Opinions varied widely as well as figures. It was a matter of surprise to those who knew that true asthma was not a common disease that authors should speak of having seen 300, 400, or 500 cases of asthma in a few years. One wondered where they got them from. There were over 5,000,000 of people in London and yet he doubted if there could be got together at the present time from all sides 500 separate cases of spasmodic or true asthma. The term "asthma" must be used then, he said, by these writers in a very wide and comprehensive sense and the numbers could only be made up by including not only all the asthmatic phenomena above referred to but many other phenomena of still more doubtful nature. Accepting, however, for the purpose of discussion the figures given, they might consider, he said, how far they proved the frequency of the association. The problem might be attacked in two ways. 1. A number of cases of asthma might be taken and the frequency of nasal disease among them be determined. Thus Lublinski found in 500 cases 143 with some pathological condition in the nose, that was in 28 per cent.; of the 143, 27 were cured (20 per cent.) and 13 relieved (10 per cent.), or 30 per cent. in all. Francis in 402 cases found nasal disease in 56, that was in 13·9 per cent., and very few of them were relieved by treatment. To make such statistics of real value it was necessary to know the frequency with which these nasal conditions occurred among healthy people, for it was obvious that the association might be accidental. 2. A number of cases of nasal disease might be taken and the frequency of asthma among them be determined. Thus asthma was associated with nasal polypi in nine out of 300 cases (Bäcker), in seven out of 200 cases (Hering), that is in 3·2 per cent. Schmiegelow's percentages were higher—51 out of 239 cases of nasal polypi and 40 out of 502 of chronic rhinitis. Francis in a recent paper maintained that when asthma was associated with nasal lesions the prospects of relief by treatment were less promising than when there was not gross disease. All these statistics were unsatisfactory because of the indefinite meaning attached to the term "asthma," yet they were sufficient to establish a connexion. At any rate, sufficient cases were recorded, and some few Dr. West said he had seen in his own experience in which true asthma associated with nasal disease had been cured or greatly relieved by removal or treatment of that disease. A few cases were also recorded in which asthma had actually been produced in persons not previously known to be asthmatic by intranasal treatment. They might conclude, therefore, that there was a relation between asthma and intranasal disease, but that its frequency was by no means so large as the published statistics seemed to show. Dr. West added that he did not believe any person who was not already asthmatic could be made asthmatic in that way, any more than he could be made epileptic by similar means. As regards the

results of treatment he expressed his general agreement with the experience of Sir Felix Semon that though relief might be given in a few cases the prospects of cure were small. Asthma, he said, was a respiratory neurosis and closely resembled epilepsy. Given the asthmatic or epileptic predisposition in either case the attack might be excited by stimuli from various parts of the body. It was therefore the rule to search for a source of irritation and when found to remove or treat it. So in asthma when nasal disease existed it was fair to try the effect of treatment. Relief might be given, though cure was unlikely; the relief of asthma by remedies applied to a healthy nose might be compared with the checking of an epileptic fit by tying a garter tightly round the leg below the knee. Asthma being a neurosis, the effect of mental impression in estimating the result of treatment must be allowed for. In conclusion, he said that knowing only too well how difficult the treatment of asthma often was he should be only too glad to treat any possible source of irritation he might discover in the nose or elsewhere in the hope that he might be fortunate enough to give relief.

In the general discussion which followed

Mr. A. J. BRADY (Sydney, N.S.W.), whilst holding no strong views on the subject of the treatment of asthma, said he preferred to take a middle course between the two openers and referred to cases where benefit had been afforded by nasal operation.

Mr. COLIN CAMPBELL (Southport) referred to what he called the non-obvious cases of nasal disease associated with asthma—namely, those cases which presented no nasal lesion between the attacks but in which during the attack swelling of the nasal mucosa with obstruction was present. He had used radium in place of the galvano-cautery, and spoke favourably of intratracheal injections for the treatment of asthma.

Dr. J. WALKER DOWNIE (Glasgow) held that polypi were a more common cause than had been stated. If the asthma were not relieved by their removal then the latter had been incomplete and some polypi had been left behind and probably high up in the crevices of the nose.

Dr. STCLAIR THOMSON considered that cases of asthma were not so common as had been stated. The patients were often only mouth breathers by night and suggestion played a very large part in the matter.

Dr. H. ALEXANDER FRANCIS (London) had found that the majority of asthmatics had normal noses and that the polypus factor had been overstated. The relationship between asthma and the nose he did not regard as that of a nasal disease but as an "inhibition of exchanges."

Dr. WATSON WILLIAMS regarded asthma as a neurosis and never relied on any intranasal treatment alone to cure a patient. He had found the faradic current to be of service.

Dr. PEGLER questioned the correctness of the diagnosis of asthma in many cases.

Dr. SCANES SPICER admitted that when he used the term "asthma" he was at a loss to know precisely what it meant. He considered that the physicians should define the term "asthma," "bronchitic asthma," and similar terms which they had introduced. He could not lay claim to have cured a case of real asthma.

Dr. MACKAY MACDONALD (London) cited a case of true asthma in which the patient had a large perforation of the triangular cartilage of the nasal septum.

Dr. HARING, Dr. PRICE-BROWN, Dr. H. TILLEY, Dr. H. SMURTHWAITE (Newcastle), Dr. NEUCOMB (New York), Dr. DONNELLAN, and Dr. JOBSON HORNE (London) also took part in the discussion.

The PRESIDENT congratulated the section upon the selection of the subject for discussion as justified by the interesting remarks it had brought out and Dr. GREVILLE MACDONALD replied.

Dr. EUGENE S. YONGE (Manchester) demonstrated his model of Meyer's apparatus for Laryngeal Demonstrations. He also read a paper on

Some Observations on the Mode of Origin of Nasal Polypi.

The paper was largely illustrated with diagrams and drawings of microscopic preparations to demonstrate the results of Dr. Yonge's investigation into the pathogenesis of the disease.

Dr. WALKER DOWNIE contributed a paper entitled, "Two and a half years' Experience of the Subcutaneous Injection of Hard Paraffin for the Removal of Deformities of the Nose."

Dr. PEGLER made a communication on "Benign Neoplasms of the Septum Nasi with particular reference to Bleeding Polypi." The paper was based upon a series of cases of bleeding polypus which had from time to time been brought before the Laryngological Society of London and was illustrated with drawings of the sections.

DERMATOLOGY.

WEDNESDAY, JULY 27TH.

Dr. T. COLCOTT FOX (London) presided over the section and welcomed the guests.

Dr. A. DOUGLAS HEATH (Birmingham) read a paper on

Acne Keloid

and demonstrated a case. The patient had a large red raised surface on the left side of the face and neck, the ear being greatly swollen. Dr. Heath said that there had certainly been some staphylococcic infection. The patch had been treated by the x rays.

The PRESIDENT considered that the case was difficult to diagnose but it certainly differed from the ordinary type of acne keloid.

Dr. H. G. BROOKE (Manchester) had had a case of acne keloid which, after treatment with the x rays, resembled in many respects the case shown.

Dr. GILCHRIST (Philadelphia) mentioned that the disease was very common in negroes.

Mr. J. M. H. MACLEOD (London) thought that the granuloma shown in the sections was very like lupus and that it was not sufficiently recognised that granulomata of this kind could be produced by the staphylococcus aureus and also by other micro-organisms.

Dr. W. T. FREEMAN (Reading) demonstrated a case of

Leucokeratosis Buccalis.

The patient was a young man with dry and sore lips and on the inside of the lips and cheeks were numerous small white patches. There was a history of excessive smoking but this had ceased.

Dr. GILCHRIST expressed the opinion that in many of these cases sebaceous glands would be found in the mucous membrane and these patches were the result of disease of these glands.

Dr. FREEMAN also demonstrated a case of

Epidermolysis Bullosa.

The bullæ had appeared ever since birth and some were present on the elbows. One toe-nail was wanting.

Dr. H. RADCLIFFE CROCKER (London) mentioned that he had a patient in University College Hospital suffering from this disease in whom the mucous membranes of the conjunctiva and larynx were also affected.

Mr. G. PERNET (London) said that he had recently shown a case in which the conjunctiva was detached from the tissue underneath.

Dr. GILCHRIST said that it had recently been shown that the deepest layer of the epidermis was very unstable in this affection.

Dr. LESLIE PHILLIPS (Birmingham) inquired as to the prognosis in these cases. A patient under his care, though suffering severely as a child, had become perfectly healthy on attaining adult life.

Mr. MALCOLM MORRIS (London) opened a discussion on

Pruritus Ani.

He pointed out that pruritus ani might be a symptom or an essential disease. As a symptom it might depend on general or on local causes. It might be due to gout, not infrequently alternating with acute attacks in the toe. Certain articles of diet, such as shell-fish and strawberries, might give rise to it and tobacco might have a like effect. Rheumatism, albuminuria, and diabetes might also give rise to it. Of the local causes the most frequent were piles, constipation, fissure, fistula, ulceration, foreign bodies, worms, pediculi, growths, and irritating discharges. Cutaneous diseases of the region might also cause pruritus. It should not, however, be forgotten that pruritus ani might be a reflex symptom dependent on disease of the genito-urinary system or on pregnancy or gall-stones. As an essential disease there was not much to be said. It was a sensory neurosis, often originating in emotional disturbances of a depressing character. Bronson thought that itching was predisposed to by hyperæsthesia. The disease might occur at any age but the cause would vary with the

age. In children intestinal worms would be the cause; in young men, local congestion from much sitting, balanitis, and other affections of the genital organs; in young women, menstruation or leucorrhœa; in middle age, piles, constipation, or prostatic disease; in women at the climacteric, one of the many disorders of the menopause; and in old age, venous stagnation, the pressure of growths, or the irritation of ulcers. The scratching might give rise to many secondary conditions and the itching might cause much loss of sleep and mental disturbance. The itching was especially severe at night. Though both sexes were attacked men were more often affected. Mr. Morris considered that most cases were due to the irritation caused by decomposed sweat or to excessive sebaceous secretion. As to treatment, the disease was often refractory but few cases were incurable. Any obvious disorder of the body must be appropriately treated and any local morbid condition found, such as piles, must be removed. The bowels must be regulated, a bland diet ordered, and highly seasoned food must be forbidden. Abstinence from alcohol must be insisted on and coffee must be denied. Calomel, ichthyol, and salol were all useful as intestinal antiseptics. Aloes was contra-indicated. Tonics might be needed. Sedatives and narcotics should rarely be given and opium was especially unsuitable as it had a tendency to cause itching. Large quantities of weak alkaline waters were often a potent aid to local treatment. When all other treatment had failed a course at Harrogate, Strathpeffer, Bath, or Marienbad often proved successful. Locally the most scrupulous cleanliness must be enjoined. The anus must be washed regularly night and morning. Bathing the part with very hot water was of much use and oatmeal, bran, borax, or carbonate of soda might with advantage be added to the water. In some cases very cold water gave more relief. If there was profuse perspiration a weak antiseptic lotion was useful. Of local anodynes cocaine was the most useful, as a suppository, or as an ointment, or as a lotion, but care must be taken not to let the patient acquire the cocaine habit. Menthol was also useful. Strong solutions of bicarbonate or bisulphate of soda were of value. Carbolic acid and tar preparations suited some cases. Balsam of Peru, chloral hydrate, benzoin, and tincture of iodine were of great value. Mercury salts were useful as antiseptics, such as ammoniated mercury and calomel. Nitrate of silver was sometimes effective when applied as a caustic or the actual cautery might be used. Stretching the sphincter might be needed if it was unusually tense and the wearing of a bone plug might be of value. The patient should be kept cool in bed and sleep between linen sheets. Static electricity and high-frequency currents had proved useful in certain cases. There was a distinct risk of over-treatment but the right remedy could be found only by trying all things and holding fast to the good. Perseverance was necessary on the part of the medical attendant as well as the patient. In the purely neurotic forms of pruritus the less local treatment was used the better. Arousing the sufferer to a sense of his duties and responsibilities would often do more than any kind of medicament. Much tact and not a little firmness would be needed in dealing with these patients who had generally no self-control. Hypnotic suggestion had occasionally been successful.

The PRESIDENT, Dr. RADCLIFFE CROCKER, Dr. ELIZA L. W. DUNBAR (Bristol), Dr. FREEMAN, Dr. M. B. HARTZELL (Philadelphia), Dr. J. A. BROOKHOUSE (Nottingham), Dr. NORMAN WALKER (Edinburgh), Mr. PERNET, Dr. A. J. HARRISON (Bristol), and Dr. GILCHRIST joined in the discussion.

Dr. HARTZELL read a paper on

Benign Cystic Epithelioma of the Type Tricho-epithelioma (Jarisch) and its Relation to so-called Adenoma of the Sweat Glands.

The case on which the paper was based was that of a girl, 14 years of age, and the growths were shown by the sections to have started definitely from the epithelial lining of the hair follicles. Dr. Hartzell maintained that all the cases described under a variety of names, such as syringo-cystadenoma, acanthoma adenoides, and syringo-cystoma, were examples of one condition, though differing in certain points.

Dr. BROOKE, while agreeing that all these cases belonged to the same series, maintained that in most instances the epithelial growth arose from the ordinary basal epithelium of the skin. He thought that the growths were really a form of nævus.

Dr. GILCHRIST thought that from the photographs in this case the growths arose from the hair follicles.

Mr. PERNET read a paper on

The Bacillus Pyocyaneus and Pemphigus Vegetans.

He described a case of pemphigus vegetans in which he had found the bacillus pyocyaneus in pure culture. The man worked in sewers. Mr. Pernet pointed out the possibility of man becoming infected by bacillus pyocyaneus from sewage and thus developing cutaneous manifestations clinically like pemphigus vegetans.

THURSDAY, JULY 28TH.

Dr. BROOKE showed some sections of his cases of Epithelioma Adenoides Cysticum as bearing on the paper read on Wednesday by Dr. Hartzell.

Dr. V. H. RUTHERFORD (London) showed a well-marked case of

Urticaria Pigmentosa

in a boy, aged 17 years. It was of four years' duration and was distributed as pigmented nodules and macules on the extremities and trunk, only the face, the palms, and the soles being free. Each lesion was of about the size of a split pea. The buccal mucous membrane presented symmetrical white patches. Itching was entirely absent and there was no history of wheals or bullæ, but factitious urticaria was readily developed. Sections of nodules presented (1) an increase of the ordinary pigment in the palisade cells of the epidermis, and (2) an infiltration of mast cells in the papillæ and upper layers of the corium.

The case was discussed by Dr. FOX, Dr. BROOKE, Dr. GILCHRIST, and Dr. CROCKER, and it was considered to be a good example of the rare commencement of the disease so late as the fourteenth year.

Dr. J. H. SEQUEIRA (London) opened a discussion on

The Comparative Value of the Old and New Methods of Treatment of Lupus Vulgaris and certain other Skin Diseases.

Dr. Sequeira commenced by saying that the very fact that a debate on the comparative value of phototherapy and radiotherapy and the older methods of treatment had been approved was in itself an indication that the exact position of these measures had not yet been authoritatively determined. The settlement of the question would be materially advanced by the meeting. The greater part of the paper was necessarily devoted to the treatment of lupus vulgaris. The only possible cure of the disease lay in the sterilisation or the complete removal of the affected tissue, not only the visible lupoid lesions but also the surrounding zone already invaded by the specific organism, though not yet showing definite disease. When the face was affected cosmetic considerations should have weight, and if there were two equally efficient measures that which caused the less disfigurement should be preferred. When the disease was situated on the trunk or limbs cosmetic considerations were of minor importance. Excision was the most rational method but it was only applicable to early lupus. In most cases when first seen by the dermatologist excision was usually out of the question because of the deformity which would result. Even skin grafting was not altogether satisfactory from the cosmetic point of view, as the graft was usually of a different colour from the surrounding skin. The want of success in excision was often due to the fear of removing too much, the surgeon naturally trying to limit the amount of disfigurement. Lang himself recorded only 43 per cent. of cases without recurrence. Scraping was usually most unsatisfactory. It removed the visible nodules but as a rule the infected zone beyond them was untouched. The opening up of lymphatic spaces, the natural channel of tuberculous infection, and the want of care in sterilising the instruments between the removal of nodules were undoubtedly a cause of spread of the disease when the operation was carelessly done. Scraping should only be used for the removal of granulations and it should always be followed by caustics or the cautery. It should never be employed at the margin of a patch. Caustics and the actual cautery were too uncertain and led to excessive scarring if used sufficiently to destroy the deep nodules, but they might be used on the mucous membranes as an adjunct to other treatment. Pyrogallol and potassium permanganate were valuable for reducing warty masses and fungating granulations. Scarification gave good scars but it was tedious and inapplicable to deep lupus. The Finsen light treatment with certain limitations was the best treatment for lupus of the skin. The tissues were sterilised with the minimum amount of disfigurement. It was of very great importance to treat

thoroughly the margin of a lupus patch and by the Finsen method this was done without any scarring. As a result of the care bestowed on the margin of a patch recurrences outside the lupus area treated by the Finsen light were very rare. The light must be sufficiently strong to penetrate to the deep nodules, and the only forms of apparatus which could effect this were the Finsen and the Finsen-Reyn lamps. The Lortet and other lamps would cure superficial lupus but even with long sittings the deep nodules in some cases could not be reached. The Finsen treatment required constant skilled attention and this was the cause of its expense. The preliminary injection of erythrosin as suggested by Dreyer caused severe and very painful reactions and it remained to be seen how far this sensitising of the tissues was likely to prove satisfactory. Untouched cases of lupus did best with the light treatment, for where there were much pigmentation and scar tissue cases often proved refractory. The main difficulty was the concurrent affection of the mucous membranes, for these could rarely be reached by the light and required other treatment. Ulcerated surfaces should be prepared for the application of the Finsen treatment and warty masses should be removed by pyrogallol or other caustics. In a few extensive cases the treatment had had to be abandoned. Statistics of the results of the treatment at the London Hospital were given which showed that during the last four and a half years 216 patients had been discharged well and remained well up to date. Of eight cases discharged well no recent information had been obtained. Three had died from phthisis or miliary tubercle, in 11 cases the light treatment was abandoned as useless, and in 45 cases the patients left for treatment elsewhere or on account of illness. The x-ray treatment was of the greatest value in the treatment of lupus vulgaris. The rays healed up ulcerated surfaces but rarely completely cured, as nodules were usually found in the scar tissue. The scar was not always satisfactory, for it frequently had telangiectases and there was a decided risk of epithelioma if the treatment was pushed for a long time. The x rays were particularly of service in those cases in which the Finsen treatment was inapplicable, especially for ulcerated surfaces and when the mucous membranes were affected. In the latter cases, however, relapses were very common. For lupus of the skin the results were not in any way comparable with those of the Finsen treatment. Radium had been found to remove nodules but in the small quantity in which it was at present available it had but a limited field of usefulness. High-frequency currents stimulated the ulcerated surfaces to heal but did not remove the lupus nodules. As to the choice of measures, Dr. Sequeira considered that for moderate cases of lupus of the skin of the face the Finsen treatment was best, preceded by the x rays if ulceration was present or by pyrogallol or permanganate of potassium if the surface was warty or fungating. In lupus of mucous membranes the x rays should be used, preceded if fungations were present by the cautery. For dry areas of lupus on the trunk or limbs excision was best with, if necessary, skin grafting, but if ulceration was present the x rays might be used. For widely disseminated lupus probably the best results would be obtained by the tuberculin treatment as recently demonstrated by Professor Wright. For lupus erythematosus local measures, such as excision, scraping, scarification, caustics, the x rays, and the Finsen treatment, all sometimes removed the lesions, but recurrence was the rule. The cause, which was probably a general one, was not removed and a cure could not be expected by local measures. High-frequency treatment was followed by improvement in a few cases but was untrustworthy. For the treatment of rodent ulcer the choice lay between excision, x-ray treatment, and the application of radium. Excision had a limited field of usefulness and could not be recommended unless it could be carried wide of the growth. The fact that the disease was so common in the neighbourhood of the eyelids and nose rendered complete excision impossible in many cases. The results of the x-ray treatment were, on the whole, very satisfactory. Where the edge was raised considerably curetting or paring down to the level of the skin, followed by the x rays, gave the most rapid results. If the orbit was involved the eyeball should be enucleated and the contents of the orbit removed and the x rays applied to the cavity. Of 89 completed cases treated at the London Hospital 30 had had more than one course of treatment, that is to say, in about 33 per cent. there were relapses which as a rule were very easily removed. Four cases were found to be intractable; and in two epithelioma developed, a condition which could scarcely be attributed to the x rays, for it was recognised long before the introduction of the x rays that in a small proportion of cases of rodent ulcer epithelioma was liable to supervene. In two cases which failed to respond to the x rays radium effected a cure. Radium was especially useful in cases of rodent ulcer of the eyelids and in the nose, parts to which the x rays could only be applied with great difficulty. The x rays had given very disappointing results in epithelioma proper. Only cases where operation had been refused or was impracticable were treated. The local lesion had disappeared but the enlargements of the lymphatic glands had proved more resistant. In mycosis fungoides the x-ray treatment was at present the only means of influencing the tumours.

Dr. BROOKE agreed that the Finsen method was the best for unbroken lupus. When the mucous membranes were affected high-frequency currents had given good results, as by passing a vacuum electrode into the nasal cavity. The Roentgen rays were very useful and for sycosis they were a powerful therapeutic aid.

Dr. MACLEOD considered that the telangiectases following the x rays were very difficult to remove. For intra-nasal lupus radium was probably the best. In leprosy the nodules were removeable by the x rays.

Mr. J. HALL-EDWARDS (Birmingham) had found the x rays most suitable for extensive cases of lupus.

Dr. S. E. DORE (London) said that in untreated cases of lupus valgaris of small extent the Finsen method was the best because it gave the best scars; even if there was much scarring from previous treatment the Finsen treatment was best. In cases of extensive but superficial lupus the preliminary treatment with the x rays would reduce the disease so that the isolated nodules might be treated with the Finsen light, or the two methods might be used concurrently. If there was extensive disease with dense masses of lupus infiltration preliminary surgical measures, such as scraping or excision, were needed before employing the Finsen light or the x rays.

Mr. PERNET mentioned that he had obtained good results with the Lortet-Genoud lamp.

Dr. GILCHRIST thought that in the treatment of malignant disease the x rays were useless if they had to pass through healthy skin. In the treatment of acne vulgaris the x rays were a valuable adjunct.

Dr. O'BRIAN had found radium of value in treating the nodules of Bazin's disease.

Dr. HARTZELL had employed with benefit the x rays in psoriasis.

Dr. A. EDDOWES (London) had always found diseased foci in so-called cures by the light treatment. Scraping alone was unsatisfactory; it should always be followed by the cautery. Radical treatment had the great advantage that it saved the patient from the possibility of pulmonary phthisis, which not rarely followed neglected lupus. For lupus nodules nitric acid applied on a match destroyed the roof and then the yellow oxide of mercury ointment might suffice to cure the nodule.

Dr. E. G. GRAHAM LITTLE (London) expressed a high opinion of the value of Professor Wright's inoculations for lupus and in severe sycosis.

Dr. FOX thought well of the x rays in parasitic conditions such as ringworm.

Mr. HALL-EDWARDS read a paper on

Chronic X-ray Dermatitis,

illustrated by two cases, and in the discussion which followed Dr. CROCKER advised the constant application of lactate of lead, especially for the acute forms of x-ray dermatitis, and Dr. NORMAN WALKER emphasised the importance of prevention.

FRIDAY, JULY 29TH.

Dr. MARTIN demonstated a case of Kaposi's Sarcoma. The patient was 75 years of age and the disease first appeared on the feet and arms as bruise-like spots. They had gradually spread and microscopically they had the structure observed in cases of this disease.

Dr. ARTHUR WHITFIELD (London) opened a discussion

On the Relative Importance of the Bacterial and Other Factors in the Causation of Skin Diseases.

He commenced by saying that of recent years the very great importance of bacteria in connexion with the production of diseases of the skin had received full recognition and he

ventured to suggest that perhaps an undue importance had been assigned to them. The diseases of the skin which were associated with the presence of organisms might conveniently be divided into four groups. In the first group were put those skin diseases in which the contagiousness was marked and the disease was undoubtedly the effect of the presence of a special organism. As examples of this class might be quoted ringworm and soft sores. In the second group were put those diseases of which the contagiousness was not marked, but a special organism was present. Inoculation was difficult. An example was pityriasis versicolor. In the third group the contagiousness was certain but the organism was present on normal skin. Impetigo contagiosa would fall into this group. In the fourth group may be placed those skin diseases of doubtful contagiousness; an organism was present which was usually to be found on healthy skins. As examples may be mentioned seborrhœa and acne. With regard to the first group the organism was the essential element in the etiology, and as the contagiousness was marked the suitability of the soil was not very important, but even in this group it could not be disregarded; for instance, in the case of ringworm there were few children who escaped and adults were but little liable to the affection. In the second group the suitability of the soil was of much greater importance, and therefore it was more difficult to inoculate the disease, even though we were quite sure that the organism was the cause of the disease. In the third group the organism was certainly of importance as was shown by the ready inoculability of the disease but there were other conditions which must coöperate. For instance, every one knew that pediculi capitis gave rise to an impetigo contagiosa; it was not merely the scratching, for other forms of irritation of the scalp did not cause impetigo. Dr. Whitfield was inclined to think that the pediculi in some way prepared the skin for the organisms of impetigo contagiosa. Possibly the streptococcus might become modified, for it was known that streptococci could be trained to attack different parts of the body. Staphylococci impetigo was not very infectious and probably a streptococcic infection preceded it. The diseases placed in the fourth class usually occurred in persons suffering from some defect of health, though the presence of the local organism was probably also required. This subject naturally led to the question, What are the normal flora of the skin? Sabouraud says that there are no normal flora—that is to say, that in health organisms did not grow on the skin, though individual microbes might lodge in the irregularities of the surface of the skin. There was much to be said in favour of this view. It should be borne in mind that the secretions of the skin were very suitable culture media for micro-organisms. Therefore if any secretion was excessive the organisms which were merely lying in units on the skin might suddenly develop and form colonies. If a man sweated much the sweat soon became sour because of its having undergone decomposition. In seborrhœa three main organisms have been described: (1) the microbacillus of Sabouraud; (2) the bottle bacillus; and (3) the non-liquifying bacillus. The microbacillus of Sabourand was present on all oily skins; it could be found in acne and in cases of greasy baldness. Dr. Whitfield, bearing in mind the oiliness of the skins of negroes, examined some cases and found this bacillus present in large numbers. It was also present in the comeda. He did not look upon this bacillus as the cause of the excessive secretion, whether this was derived from the sebaceous glands only or from the sweat glands as well. He considered it as very doubtful if the bacillus had anything to do with the fall of the hair, for in women there were many microbacilli but rarely loss of hair. The bottle bacillus was always to be found where the sebaceous glands were well developed. It was found in great abundance in the grouped comedones of infants. Unfortunately it had never been found possible to grow the bottle bacillus. The non-liquifying bacillus was very plentiful. It could be found not only in seborrhœa, but elsewhere, as in the dry pityriasis of the face. Dr. Whitfield had attempted to inoculate it but had not been successful. In seborrhœa eczema there were probably two factors: (1) free secretion and (2) septic organisms; neither could have any effect without the other. Probably another etiological element was a toxin absorbed from the alimentary canal, for faults in metabolism had a marked effect on the irritability of the skin. The paper was illustrated by lantern slides.

Dr. GILCHRIST expressed the opinion that much work on the flora of the skin had been done by surgeons. With regard to the etiology of acne he had found the bacillus acnes 60 times in succession and had been able to grow it in acid glycerine agar. Also he had been able to show that the blood of acne patients caused agglutination of the bacillus acnes, but this did not happen in cases not suffering from acne. This was a very strong proof in favour of the specific action of the bacillus acnes.

Dr. FOX considered that comedones were only an exaggeration of the little plug which was so commonly found in sebaceous glands.

Dr. LESLIE ROBERTS (Liverpool) expressed his surprise that so little stress had been laid on heredity in seborrhœa. He thought it should be borne in mind that seborrhœa was not a secretion but purely an exfoliation.

Dr. EDDOWES said that he had often noticed that those who lost their hair from seborrhœa had previously had a great quantity of hair and he was therefore inclined to think that the first action of the disease was to stimulate the growth of the hair.

Dr. A. DOUGLAS HEATH (Birmingham) thought that symbiosis might explain many of the difficulties.

Dr. DORE asked for information as to the standardisation of culture media, as he could not make some organisms grow which Sabourand said would grow.

Dr. W. K. WILLS (Bristol) drew attention to the action of x rays on acne; the eruption was probably removed by the drying up of the secretion.

Dr. LITTLE mentioned that when the staphylococcic inoculation method of Dr. Wright was employed only the staphylococci were removed and yet the eruption disappeared although the other organisms were left.

Dr. GILCHRIST read a paper on

Erysipeloid

based on 329 cases. The eruption consisted in erythematous blotches on the hands with a well defined red edge. There was often much pain but lymphangitis was rare. There was no tendency to suppuration. The cases appeared at Baltimore in June and disappeared in August. In 323 of the cases the patient had been pinched by a crab or scratched by a piece of the shell at the centre of the patch. The incubation appeared to be about two days on an average. It tended to disappear after a few weeks. He had been unable to find any organism and inoculation experiments had failed. Injections hypodermically of crushed crabs had had no effect. He was inclined to think it was due to a toxin and not to an organism.

Several members stated that they had never seen the disease, but others had seen a few cases.

Dr. ROBERTS read a paper on "Non-parasitic Cutaneous Reactions."

Dr. G. NORMAN MEACHEN (London) read a paper on

The Influence of Peripheral Nerve Irritation upon the Production of Diseases of the Skin.

It was now generally recognised that many cutaneous manifestations were connected with the trophic influences of the nerves of the skin, but it had not been sufficiently acknowledged that local irritation of the peripheral nerves might influence the production of skin diseases. The dental theory of Jaquet provided a very plausible explanation of one variety of alopecia areata, especially as in many cases the extraction of the carious tooth had been speedily followed by a return of the growth of the hair. The ocular nerves might possibly also possess considerable influence upon the progress of alopecia areata. Pernet and Whitfield had both suggested that the loss of growth of the hair might be due to errors of refraction, and cases had been described in which the hair was quickly renewed after the prescription of appropriate glasses. The influence of dental irritation in provoking eczematous outbreaks in infants had long been recognised. Irritation arising from cerebral and spinal nerves might predispose to eruptions of an herpetic type, and Gaucher had related several cases in which herpes appeared after quite superficial injuries. In such cases it was reasonable to suppose that the contusion of minute terminal nerve filaments acted as a source of irritation and so determined the appearance of an eruption. Scratching appeared to give rise to lichen planus and possibly the scratching might act reflexly.

TROPICAL DISEASES.

THURSDAY, JULY 28TH.

Dr. J. W. W. STEPHENS (Liverpool) opened the discussion on

The Prophylaxis of Malaria.

He pointed out the necessity of regarding malaria as a contagious disease, the source of contagion being principally the child population carrying malarial parasites in its blood. The species of anophelines which conveyed malaria in a greater or less degree were:—(*a*) In Europe: the anopheles maculipennis, anopheles bifurcatus, P. superpictus, and M. pseudopictus. (*b*) In Africa: anopheles maculipennis, P. costalis, M. funestus, and P. chaudoyei. (*c*) In India: M. Listoni, M. culicifacies, and N. maculipalpis (?). (*d*) In North America: anopheles maculipennis. (*e*) West Indies: anopheles albipes. In all there were about one dozen out of 100 known species. It was therefore important before undertaking the extermination of anopheles in any given district with a view of preventing or eradicating malaria, to determine the variety of anopheles present, otherwise useless expense and labour might be involved. Some mosquitoes bred in dirty puddles, for instance, the M. Rossii, which was harmless; others preferred clean water and streams, such as the M. culicifacies, which was an active agent in spreading malaria. It was therefore useless to sweep out the foul puddles and to leave the running streams uninvestigated. The normal flight of anophelines did not exceed some hundreds of yards; therefore, in the centre of towns, although some kinds of mosquitoes prevailed, such as stegomyia, anopheletes were only met with in the outskirts where clear running water was adjacent. In India it was proved that people dwelling in houses situated a mile from anopheles breeding grounds were practically free from malaria; in Freetown on the west coast of Africa the distance was less—about from a quarter to half a mile only. The measures usually adopted for the prophylaxis of malaria were the following: 1. Anti-larval. This was the fundamental method of prevention and should, in the form of systematic drainage, be a steady and continuous policy. 2. Quinine. The success attending the regular administration of quinine was remarkable; 15 grains every second day had been in certain instances effective. 3. Segregation of Europeans. On general sanitary grounds this was highly to be recommended, the natives being the source of infection to Europeans. The objection to this plan was that the native was neglected while he ought to be regarded as worthy of protection as the white man. When the native was advanced in sanitary and general education to the same position as the white man this sentimental idea might be listened to but not till then. Of the determined attempts to exterminate mosquitoes, the operations at Ismailia and Mian Mir (Punjab) were the best known. The former was in a limited area, the latter in a large cantonment where irrigation canals were numerous and therefore difficult to deal with, but the failure at Mian Mir was due not to the irrigating channels within the area but to immigration from without.

Major RONALD ROSS, C.B. (Liverpool), read a communication upon

The Anti-Malarial Experiment at Mian Mir (Punjab).

With a view to demonstrate by test operations the utility of all anti-malarial measures, particularly the destruction of anopheles larvæ, operations at Mian Mir were undertaken. In criticising these operations Major Ross dealt with the omissions in the report of dates, maps, and the number of the population of the cantonment. There was an indefinite account of the organisation at work on the experiment, but the amount of money expended seemed too small for a large undertaking of the kind to have been thorough. The test applied for ascertaining the reduction in the number of mosquitoes present seemed also unsatisfactory. Individual experience in regard to these points appeared worthless and only the general consensus of opinion could be approximately relied upon. The test for malaria reduction by the examination of the blood of the native children in the neighbourhood was a long one and of a variable quantity. The effect of the operations by Captain S. P. James, I.M.S., and Lieutenant S. R. Christophers, I.M.S., on the number of mosquitoes, although extending over one and a half years, was inappreciable or even negative. The operations at Mian Mir proved little or nothing except that in an area of the extent of the cantonment selected for experiment it was impossible by the expenditure of £200 or £300 to make any impression on the number of mosquitoes within the area or on the amount of malaria present. They had still to determine in work of this kind (*a*) the radius of operations required to reduce the density of a given species of mosquito to a given percentage; and (*b*) the percentage of mosquito reduction required in order to obtain ultimately a given percentage of malaria reduction.

Captain JAMES and Lieutenant CHRISTOPHERS contributed a paper on

The Success of Mosquito Destruction Operations at Mian Mir (Punjab).

They carried on the work of mosquito destruction and malaria reduction for over two years and the result of the attempt, according to their statement, was in both cases poor and totally out of proportion to the means employed. They did not ascribe the failure to want of thoroughness or to peculiar conditions in Mian Mir but considered that the difference between their efforts and those of others was entirely due to the great disparity in the value of the tests used in estimating the reality of results achieved. The Mian Mir experiment proved the difficulty of conducting successfully operations of the kind. Local destruction of breeding places was quite futile, so long as the infiltration of adult mosquitoes from outside the area operated upon was possible. Captain James and Lieutenant Christophers had no hesitation in challenging as absurd the reported successes of mosquito brigades in ridding a town of malaria.

Dr. ANDREW DUNCAN, Lieutenant-Colonel, I.M.S. (retired), said that in military campaigns in tropical countries it was necessary to pay attention to the race and age of the soldiers, to the season of the year for operations, to the clothing of the men, the period of marching, the camping grounds, the food, and the precautions at night. Dr. Duncan recommended that flannel should be worn, that the food should be sufficient and the diet not a monotonous one, and that where possible the soldier should sleep on the ground with merely a blanket for bedding. Malarial fever was to be prevented by: (1) protection against the infected mosquitoes: (2) destruction of the infected mosquitoes; and (3) prophylactic drugs. Quinine was the best medicinal prophylaxis in doses of three grains every morning.

Mr. W. HENRY W. STRACHAN, C.M.G., principal medical officer of Lagos, West Africa, sent

Notes on the Prophylaxis of Malaria.

The rule to be observed in malarial areas should be, "Do not permit yourself to be bitten by mosquitoes." This involved measures taken for the destruction of mosquitoes but these involved an expenditure of money and time almost entirely out of the range of practical work. Mosquito destruction resolved itself into elimination of all areas where the breeding of mosquitoes was possible or probable, be it wells, swamps, puddles around houses, tanks, flower vases, &c. To ward off adult mosquitoes mosquito-nets, mosquito-proof rooms, punkahs, and burning certain materials in rooms should be resorted to. Among accessory measures Mr. Strachan advocated the prevention of chill, avoiding exposure in the sun during the hottest time of the day, and temperance in all things. Quinine as a prophylactic in daily doses of five or six grains or in larger doses once or twice weekly was attended with marked benefit. When quinine could not be taken "thiocol" promised fairly well as a malarial prophylactic. There was much to be said against the segregation method of dealing with malaria, but although in theory it was not carried out in practice race associated with race and solved the problem involuntarily. At the present time anti-mosquito measures and the administration of quinine summed up the prophylaxis of malaria.

In the discussion which followed these papers on the prophylaxis of malaria the following took part.

Colonel KENNETH MACLEOD, I.M.S. (retired) referred to the food of the mosquito larvæ and considered this an essential point in the matter of malaria prophylaxis. The conveyance of mosquitoes by railway carriages and ships was no doubt a possible means of dissemination. The use of the broom in sweeping away dust from dark corners where mosquitoes lodged was an important element in prophylaxis. Irrigation was so necessary a part in the agriculture of India that to sweep it away would mean famine; other methods, such as improved drainage, would no doubt be found which would render this unnecesary.

Dr. D. E. ANDERSONS (Paris) remarked that the smoke in the native huts in Madagascar served as an efficient

mosquito destroyer; the smoke merely paralysed the mosquito, however, for the time being.

Major G. H. FINK, I.M.S. (retired), stated that there were many points in Dr. Stephen's paper which placed us in a very difficult position as to the prime origin of malaria while considering Ross's investigations with regard to the particular species of anopheles in which he (Ross) had found the malarial parasite. Plehn's "primitive bodies" or karyochromatophile granules, mentioned in Manson's book, had yet to be thoroughly investigated, since it was acknowledged that very little was known about them, except that they are to be seen in the blood of Europeans on the West Coast of Africa soon after their arrival there, but attended with anæmia, and this before malaria had pronounced itself in the individual. It might be considered as a "latent phase" of malarial fever parasites, but an organism on the borderland between the vegetable and the animal, which presented both the male and the female element, which had to pass through the usual cycle before its exact position could be recognised in the body of the mosquito and before malarial fever was transmitted through the bite of that insect to man.

Dr. PHILIP O. MALABRE (Southport) inquired if there was any truth in the assertion that dragon-flies destroyed mosquitoes.

Captain C. E. WILLIAMS, I.M.S., stated that dragon-flies preyed on mosquitoes and where these flies existed in numbers mosquitoes were rare. He had lately raised dragon-flies from the larvæ and fed them on living mosquitoes which they seized when on the wing. Captain Williams had also raised nymphæ of various species of mantis and fed them successfully on mosquitoes.

Mr. F. J. A. BERINGER (Colonial Service Gold Coast) stated that he tried quinine prophylaxis in Hong-Kong amongst the British troops but without marked beneficial results. The cases of fever might have been a little less severe, but there was no diminution in the actual number of cases. The diagnosis of malarial infection was chiefly clinical but in many examined the malarial parasite was found.

Sir PATRICK MANSON, F.R.S., D.Sc., remarked that the failure of quinine to act as a prophylactic amongst troops in Hong-Kong led him to doubt the accuracy of the diagnosis of the kind of fever the soldiers were suffering from. In several countries, and especially some of the Pacific islands, malaria was unknown at present. It would be well to consider whether any means could be devised to ward off malaria from them.

Professor W. J. SIMPSON observed that it was a pity the experiment of mosquito extermination had been tried at Mian Mir. The cantonment did not lend itself to experimental work of the kind except under a properly organised staff, which at Mian Mir was quite insufficient. The recent proposition that the civil surgeons of five municipalities in India should carry out a campaign against mosquitoes was a mistake. The civil surgeons in India have an enormous amount of clinical and practical work without indulging in anti-mosquito crusades, and to ask these overworked medical officers to undertake extra duties of the kind proposed was certain to end in failure. India was without a proper sanitary organisation but for the sake of the people of India it would be soon created.

Dr. ALEXANDER CROMBIE, C.B. (London) remarked that we had recently been given two object lessons—one in Havana, where the work of destroying mosquitoes and eradicating yellow fever had been successful; and the other at Mian Mir, where the results had failed from want of sufficient organisation. So long ago as 1342 in Spain malaria was associated with the irrigation necessary for rice growing and the cultivation was prohibited by law. The work of the civil surgeons in India was enormous and to add mosquito destruction to their duties, considering the enormous tracts of country they presided over as health officers, was sure to be inefficiently performed.

Dr. LOUIS SAMBON and Major T. MCCULLOCH, R.A.M.C., also joined in the discussion.

Dr. F. M. SANDWITH (lecturer at the London School of Tropical Medicine) read a paper on

Infectious Jaundice.

He compared the disease, which was endemic in Smyrna and in Alexandria and epidemic in Nauplia in Greece, with the cases of Weil's disease reported from Germany, England, the United States, and China. He also suggested that the disease probably existed in India and other tropical countries, though masked under other headings. Infectious jaundice was an acute infection characterised by fever, jaundice, enlarged liver and spleen, and nephritis. It occurred chiefly among male adults during the summer months and was a filth disease engendered by contamination with sewage or putrid meat. He suggested mosquitoes or other insects as transmitters and recommended the destruction of all mosquitoes in one of the infected towns as a useful experiment. He gave reasons for not accepting the idea of this disease being yellow fever in a modified form and suggested that the differences between infectious jaundice and Weil's disease could be accounted for by variations in the climate, temperature, race, and sanitary surroundings.

Major H. B. MATHIAS, R.A.M.C., read a paper on

Jaundice in South Africa.

The experience of the disease was gained by Major Mathias during the late South African campaign, when jaundice seemed to have been prevalent amongst the troops, no fewer than 5648 cases being recorded. The period of greatest incidence was during the South African autumn and winter months from February to June. The severity of the disease varied; in some there was little, if any, pyrexia or constitutional disturbance; in others there were nausea, severe pains in the back, initial rigors, a temperature from 100° to 103° F., pain in the epigastrium and right hypochondrium, enlargement of both liver and spleen, and occasionally a pear-shaped tumour over the gall-bladder. The jaundice usually occurred during the third day of the illness and might persist a month or more. The mortality amongst British troops was *nil*, but the attack was followed by great debility and mental depression. Major Mathias concluded that the disease was due to a definite infection of a toxic form and that the poison was generated in consequence of insanitary conditions. That the jaundiced condition was associated with enteric fever would seem confirmed, for it appeared each year when enteric fever had reached its maximum in the autumn and was on its decline. This was in accordance with observations made elsewhere and was a point of great interest, but there was no direct evidence to connect the epidemiology of the two diseases, yet nevertheless it appeared that there was a distinct form of epidemic jaundice following outbreaks of typhoid fever, and clinical experience would point to the former being consequent upon enteric fever and not true Weil's disease.

Colonel MACLEOD remarked that in the island of Lewis some 45 years ago he remembered an epidemic of jaundice associated with pain, vomiting, fever, clay-coloured stools, and dark urine, &c., so that this disease was not confined to any particular country or locality.

Dr. M. A. RUFFER stated that in Alexandria he had witnessed outbreaks of bilious typhoid fever in which the mortality amounted to 20 or 30 per cent. of those attacked. He did not think that these were cases of Weil's disease. In bilious typhoid fever the patient became suddenly extremely ill; not so in Weil's disease. Moreover, no bacterium were found in the blood or tissue of bilious typhoid fever, nor did these infect animals when tested experimentally. Kidney lesions were noted in the Alexandria outbreak corresponding to those met with in yellow fever. Hæmorrhages round the hepatic veins and emboli of hepatic cells within the hepatic veins were met with.

Major ANDREW BUCHANAN, I.M.S., said that at one time there were in 1899 150 cases of epidemic jaundice in hospital at Nagpur. In these cases the temperature was raised for only a day or two, the symptoms were those of ordinary jaundice, and the patients lost weight. Only one of the persons attacked died. Adult natives in India were so seldom attacked by typhoid fever that it did not seem possible to connect the two diseases in this particular instance.

Mr. JAMES CANTLIE (London) described a case of Climatic Bubo in a patient from Mysore who had just landed in England. In Mysore plague was prevalent and the patient was freely exposed to plague infection. After leaving Mysore he called at Madras, Colombo, and Suez, and on the day before landing in England on Feb. 24th found a tender gland in the left groin. By March 4th the evening temperature had reached 101° F. Febrile conditions continued, pus was found around the gland on March 7th, and the gland was excised. Specimens of the pus and gland tissue were sent to Professor Hewlett who succeeded in cultivating a bacillus resembling the plague bacillus. The cultures proved

innocuous to animals. The association between climatic buboes and plague had been frequently referred to by Mr. Cantlie and he had applied the name pestis minor to these complaints. A definite bacillus was found by Professor Simpson in Calcutta in cases of the kind and Mr. Cantlie was inclined to believe that the cases of plague referred to by Koch as occurring in German East Africa were of the nature of pestis minor and not true plague. It was well known that climatic buboes had been prevalent for some time on the East African coast, and seeing that the centre of plague referred to by Koch had not extended at any known period, the probability of an extension inland from the eastern coast of Africa of the disease climatic bubo (pestis minor) explained the outbreak related by Koch. Lately Mr. Cantlie had seen a case of climatic bubo from Northern Nigeria where the disease was described as a new complaint. It would therefore seem that the disease climatic buboes (pestis minor) was travelling across the African continent from east to west.

Dr. M. CAMERON BLAIR (Northern Nigeria Protectorate) said that quite 25 per cent. of the native soldiers in Northern Nigeria suffered during the year from indolent inguinal buboes which did not generally suppurate. He had always regarded these buboes as venereal in origin.

Mr. JAMES CANTLIE read a paper upon

Subcutaneous Nodules attended by Febrile Attacks

in a patient from the Kolar goldfields, Mysore State. The patient had had several eruptions of these subcutaneous nodules. When seen by Mr. Cantlie in London there were three nodules noticeable on the outside of the left leg, another on the inside, and a third on the front of the left thigh. The nodules felt like shotty particles beneath the surface; the skin over two of the nodules was slightly red for an area of a quarter of an inch all around the nodules. The patient had had similar lesions on the upper extremities and on the right lower limb, which came suddenly, lasted some three weeks, and disappeared spontaneously. With the appearance of each nodule a slight attack of fever occurred. Mr. Cantlie excised one of the nodules and sections of the growth were made by Dr. G. C. Low and exhibited. No parasite was to be seen macroscopically or microscopically; at one point in the nodule a freshly formed inflammatory thickening was evident with widely dilated lymphatic spaces. Mr. Cantlie was unaware that a similar condition had ever been described.

FRIDAY, JULY 29TH.

Major W. B. LEISHMAN, R.A.M.C., opened a discussion on the Leishman-Donovan bodies with a paper entitled

The Nature and Significance of the Leishman-Donovan Body.

The disease associated with these bodies, Major Leishman remarked, was by no means uncommon in the tropics. The first case in which the "bodies" were found was that of a soldier, invalided from Dum-Dum in November, 1900, with tropical cachexia and splenomegaly, and soldiers at Netley presenting a similar clinical picture were so frequently found to have served at or near this station that he termed the condition "Dum-Dum fever." The name was, of course, only a temporary expedient. Since this discovery cases had been reported from three or four widely separated districts of India, from China, Tunis, Algiers, Arabia, and Egypt. The parasites, although originally found in the spleen, had since been met with in the liver, the mesenteric glands, the bone marrow, the kidney, and in ulcers involving the intestinal mucosa. The parasites appeared to be chiefly, if not solely, intracellular, and occurred in the protoplasm of large mononuclear cells, probably "macrophages." Neither the parasites nor the cells which harboured them appeared to suffer from their mutual association. In specimens obtained by splenic or hepatic puncture during life the parasites were, however, usually found free in groups of several members embedded in a structureless stroma, which was probably disintegrated remains of large mononuclear cells due to mechanical violence. The signs and symptoms of the physical condition associated with the "bodies" were: (1) splenic and hepatic enlargement; (2) an earthy pallor of the skin; (3) a continued irregularly remittent fever; (4) hæmorrhages from the nose, gums, and subcutaneously; (5) œdema of a transitory nature in the limbs; (6) congestion of the lungs, diarrhœa, and dysentery had been observed; and (7) a marked mononuclear increase. The symptoms were very similar to those noted in kala-azar, and Bentley and Rogers had found the bodies recently in the spleen of persons suffering from this disease. The nature of the parasite had been variously interpreted. (1) Major Ross believed it to be a new genus of sporozoa; (2) Laveran considered the bodies to belong to the piroplasmata; and (3) Leishman thought the "bodies" represented a stage in the life history of a flagellate organism closely resembling a trypanosoma if not actually belonging to that genus. Recent investigations by Marchand and Ledingham had led to the same conclusion as Leishman. Schaudinn, from observations made on the transformations undergone by a blood parasite of the stone owl when taken into the stomach of a mosquito (culex pipiens), came to the conclusion that this halteridium was, in reality, a sexual form of a true trypanosome to which he gave the name trypanosoma noctuæ. Prowazek supported Schaudinn's conclusions and it would seem that between the resting forms of trypanosomes these authorities described a very close resemblance with the Leishman-Donovan bodies was traceable. From the frequency with which dysenteric complications had been reported in the course of the disease and the fact that the "bodies" had been found in ulcer of the intestine, they seemed to have a key to the channel of elimination of the parasite from the human body. The discovery by Wright that similar parasitic bodies were met with in Delhi boils was also of considerable importance. The announcement by Captain Rogers that trypanosomes had developed from cultures of these bodies seemed to clench the association between the bodies and trypanosomes.

Major C. DONOVAN, I.M.S., sent a communication on

Human Piroplasmosis.

Major Donovan accepted the view of Laveran and Mesnil that the Leishman-Donovan body was a piroplasma. He found the parasite in 72 cases out of 1304 patients admitted into the General Hospital at Madras. The disease associated with the "bodies" attacked the poorer class of natives of Madras of both sexes and of all castes and creeds. Eurasians and Europeans were also subject to the disease. Amongst the signs and symptoms enumerated by Major Donovan he mentioned cancrum oris, œdema of the feet, and ascites. Amongst the causes of death he notified general infection, cancrum oris, œdema of the glottis, diarrhœa, peritonitis, broncho-pneumonia, and one case of hæmorrhage from splenic puncture. Examinations of the blood in cases of piroplasma infection showed decrease of red corpuscles, no actual increase of leucocytes, but a relative increase of mononuclears. The urine usually contained albumin and invariably pigment. Four cases of the disease were related in detail by Major Donovan.

Dr. CHARLES A. BENTLEY (Tezpur, Assam) sent

Some Notes upon Kala-azar and the New Bodies.

Dr. Bentley described kala-azar to be an endemic disease occurring in many parts of India and probably in other countries. Occasionally the disease might appear in epidemic form. Amongst the most notable signs and symptoms were gradual enlargement of the spleen and sometimes of the liver, emaciation, irregular fever, pain in the ends of the long bones, gastro-intestinal or dysenteric symptoms, secondary anæmia, and occasional hæmorrhage from the stomach, gums, and nose. Of all forms of the disease the dysenteric was the most rapidly fatal. The disease was most resistant to treatment. Quinine was useless and removal to an uninfected site promised best. During an epidemic few might escape and the case mortality might reach 90 per cent. As the epidemic waned the virulence lessened until at last the patient would appear to be suffering from "ordinary malaria." The only accurate method of differential diagnosis was the examination of the blood drawn from the spleen during life. Dr. Bentley described the parasite and its situation in relation to the blood cells. He considered that it had not at present been definitely shown that the "body" was more than the spore of some micro- or myxo-sporidian and it might yet prove to be a phase in the life-history of some flagellate or other organism. He had found the parasitic body in dogs, cats, goats, cattle, rats, deer, bats, fish, frogs, and snakes, but not in the stomach of any biting fly or insect, nor in any human skin lesion. An interesting observation by Dr. Bentley carried support to Sambon's contention that certain mud-fish on the shores of the Victoria Nyanza had a determining influence in the spread of trypanosomiasis. In Assam Dr. Bentley found that certain species of mud-fish taken from marshes or pools adjacent to kala-azar infected lines in nearly every instance showed marked trypanosomiasis and that fish taken from

pools at a distance from any possible source of fæcal contamination appeared to be entirely free from trypanosome infection.

Captain LEONARD ROGERS, I.M.S. (acting professor of pathology, Calcutta), contributed a paper on

Cachexial Fever in India associated with Cunningham-Leishman-Donovan Bodies.

Captain Rogers said that he believed that the great majority of cases known hitherto as "malarial cachexia" occurring in Calcutta at any rate during the hot weather months, when true malarial cases were at their minimum, were really cachexial fever due to the new parasite. The most interesting part of Captain Rogers's paper referred to the cultivation of the protozoal parasite of cachexial fevers. In experimenting in this direction Captain Rogers added the blood obtained from splenic punctures of persons suffering from the disease to a small quantity of sterile citrate of soda solution to prevent the blood clotting and then kept it under different conditions. When the solutions were kept at blood heat the parasites very rapidly degenerated and disappeared; yet when placed in a cold incubator at 27° C. they retained their natural conditions for several days and stained perfectly. They also increased in numbers, so that instead of two cultures in a field of an oil immersion lens as in the freshly taken blood, after a day or two scores and even a hundred of very young forms could be found in the same area. Numerous divided forms were also found in even a single field, so that there was clear evidence of the survival and multiplication of the organism outside the body. When the temperature of the incubator was reduced to 22° C. the parasites were seen to multiply more readily, as many of the forms seemed considerably larger and appeared in a single day. Captain Rogers looked for flagellated bodies and found in two cultures unmistakable trypanosomes, together with smaller pear-shaped flagellated bodies and other intermediate forms. The more marked cases showed completely developed trypanosomes with thick flagella and macro- and micro-nucleus after incubation for one day, while the living forms were also seen in the blood culture moving rapidly among the corpuscles. It is worthy of note in regard to the possible method of spread of the disease that in October, 1901, Surgeon Chatterji found a trypanosome in the proboscis of a mosquito.

Tropical Splenomegaly and Oriental Sore

was the title of a paper by Lieutenant S. R. CHRISTOPHERS, I.M.S. The nature of the Leishman-Donovan bodies, according to Lieutenant Christophers, was as yet undetermined, but that they were affiliated with some flagellated organism would seem likely. He pointed out some time ago that the matrix of the zooglœa mass was merely the cytoplasm of endothelial cells of the spleen, more especially that derived from the large macrophages. The "bodies" did not appear to be a parasite of the red blood cell and they would appear to be no more a blood parasite than were the organisms of septicæmia or the tubercle bacillus. Recently Wright in America discovered the "bodies" in the granulation tissue of tropical ulcer. In India Captain James also found them in oriental sore. Lieutenant Christophers found the "bodies" free in blood from the spleen and believed them to have been liberated artificially by rupture of cells, more especially the large macrophages. The same held good in the case of the liver and bone marrow and the condition might be described as an engorgement of the endothelial cells with the parasite. In the lung, testis, and kidney the "bodies" were seen lying in cells of an endothelial nature and closer investigation showed them in the endothelial cells of the finest capillaries. In the larger vessels around granulation tissue endothelial cells were seen containing from two to six "bodies" and in many of the still larger vessels cells crowded with "bodies" almost blocked the lumen. It was apparent, therefore, that they had in infection by the Leishman-Donovan bodies a type of infection in which the vascular endothelium was mainly implicated.

Dr. ALDO CASTELLANI submitted a paper entitled

Leishmania Donovani in Ceylon.

Dr. Castellani described a case in which the Leishman-Donovan bodies were found without the usual features of tropical splenomegaly being present. In Ceylon Dr. Castellani and Dr. Willey found in the splenic blood of rats infected with trypanosoma Lewisi structures very like the Leishman-Donovan bodies. Dr. Castellani considered it possible that the "body" was a parasite, in one of its stages of development, of the nucleus of the leucocytes—a leucocytozoon. He regarded the "bodies" as extra-corpuscular parasites of the red blood corpuscles.

Dr. LLEWELLYN P. PHILLIPS (Cairo) sent a

Note on the Occurrence of the Leishman-Donovan Parasite in Arabia and Egypt.

Dr. Phillips found the "bodies" in the splenic pulp of a Turk who had lived for a long time in Yemen in Arabia and in a man who had dwelt at Mecca. Arabia must therefore be added to the countries in which the Leishman-Donovan parasite occurred. In native Egyptians, also, Dr. Phillips had found the "bodies."

In the discussion which followed the papers upon the Leishman-Donovan bodies the following remarks were made.

Sir PATRICK MANSON warned medical men in tropical countries concerning the danger of indiscriminately puncturing the spleen in the search for Leishman-Donovan bodies. In the splenomegaly of leucocythæmia puncture of the spleen might be followed by disastrous hæmorrhage and he therefore urged careful blood examinations before splenic puncture was attempted. The presence in the disease connected with these bodies of ulceration, dysentery, or oriental sore suggested a mode of exit of the parasite. It might emerge through ulcerations and enter by insect bites. Oriental sore must now be regarded as a serious disease and sometimes leading to a general infection. He had seen a patient suffering from oriental sore subsequently develop disease of the testicle necessitating castration.

Colonel DAVID BRUCE stated that Captain Rogers's discovery of the development of Leishman's bodies into trypanosoma was a startling observation and if confirmed was highly important and it was difficult to see where a fallacy could have crept in. Colonel Bruce thought that the "bodies" ought to be known as the Leishman bodies as Leishman discovered these parasites and Donovan only confirmed the observation.

Dr. G. C. LOW (London School of Tropical Medicine) remarked that in experiments which he had made he failed to find that the parasites multiplied during incubation. At a temperature of 37° C. and room temperature the parasites entirely disappeared on the second day. In ringed fresh specimens also no changes in the parasites were found at the end of four days. The parasites were found in the macrophages or splenic cells of the spleen, in the secreting cells of the liver, in the marrow cells, and also apparently in some situations in the endothelial cells. It would be well were the "bodies" sought for in splenic anæmia. Dr. Low remarked that in view of Schaudinn's discovery of the change of an intra-corpuscular pigmented parasite (halteridium) into a trypanosome it would be well to consider the possibility of the Leishman-Donovan bodies having something to do with the resting stage of malaria. It was evident that the "bodies" existed over a vast area and were prevalent in many intensely malarial areas.

Colonel KENNETH MCLEOD, I.M.S. (retired), remarked that the hæmorrhages in Leishman disease were more pronounced than in kala-azar.

Dr. ALEXANDER CROMBIE, C.B. (London) said that pigmentation was common in cachexial fever and might be due possibly not to malaria, but to the presence of Leishman-Donovan bodies. Oriental or Scinde sores were common amongst camel-drivers and men who looked after camels. It was known that two species of trypanosoma infected camels, and it would appear that the animals infected the men who attended upon them. In districts where there were no camels there were no sores of the kind amongst men.

Mr. JONATHAN HUTCHINSON (London), Dr. J. W. W. STEPHENS (Liverpool), and Dr. LOUIS W. SAMBON also took part in the discussion.

Fleet-Surgeon P. W. BASSETT-SMITH, R.N. (lecturer on tropical medicine, Haslar), communicated a paper on

The Fungus of Tinea Imbricata.

This parasitic skin affection occurred in the Far East in the islands of the Malay Archipelago and recently it was observed in Brazil. From careful observations Fleet-Surgeon Bassett-Smith had come to the conclusion that the fungus of the disease could not be regarded as one of the trichophytons but as belonging to the aspergillus group of the perisporiacea. It differed, however, from the aspergilli in having two forms of generation: (1) by gonidia from the gonidiophores; and (2) by the development of oval spores

direct from the mycelium cells. The name lepidophyton (Tribondeau) should be retained for the fungus.

Sir PATRICK MANSON observed that in attempts at the culture of the fungus of tinea imbricata the difficulty of obtaining scales free from fungus forms other than that in question should be borne in mind.

Mr. T. J. TONKIN (Yapton) read a paper entitled

Leprosy a Curable Disease.

Mr. Tonkin contended that leprosy was a disease not only markedly amenable in many of its grades to intelligent direction but one from which both with and without treatment recovery might take place. At one time it was no doubt to the advantage of any community that leprosy should be regarded as an incurable ailment, as thereby segregation was enforced and the only means of eradicating the disease believed in insisted upon. At the present day, when knowledge was more advanced, to continue to call leprosy an incurable disease was unscientific and unnecessary to the welfare of an intelligent community. There was no doubt the prevalent idea that leprosy was incurable prevented lepers coming for treatment during the early stages of the disease and thereby lessening the chances of cure. It was important that the fact that leprosy was no longer regarded as an incurable disease should be made widely known and the responsibility lay with the medical profession to do so.

Mr. JONATHAN HUTCHINSON advocated the potency of chaulmoogra oil in the treatment of leprosy. He exhibited photographs of one case in which chaulmoogra oil was given in moderate doses for nine months; the tubercular character of the skin had quite disappeared and to all appearances the patient was quite well. Mr. Hutchinson also related the case of a woman who recovered from leprosy and now, 25 years later, was healthy and well. In Norway Dannielssen's cases relapsed when they left the asylum and went home again. Mr. Hutchinson ascribed the relapse to reverting to bad fish.

Mr. CANTLIE stated that within the past 12 months he had seen two cases of leprosy from South America. In certain inland towns in South America south of the equator leprosy was prevalent in a very mild form. The only signs and symptoms which appeared after, it might be, years of infection were numb patches on the legs, some whitening of the skin over the numb patch, with a faint hyperæmic margin, some thickening of the nerve trunks leading to the patch, and loss of some of the hair of the eyebrows. Mr. Cantlie was convinced that there were many persons suffering from mild types of leprosy, showing numb patches on the lower extremity and loss of eyebrows, who completely recovered by change of environment, and he agreed with both Mr. Tonkin and Mr. Hutchinson that leprosy should be looked upon as an ailment that could be arrested.

Dr. CROMBIE said that it must never be forgotten in speaking of leprosy and its cure that there were two kinds of leprosy—the tubercular and anæsthetic, and that in the latter the chances of arresting the disease seemed occasionally to be possible.

Mr. CANTLIE read a paper upon

A Liver Abscess followed by an Abscess in the Upper Lobe of the Right Lung.

The patient had been operated upon in India in the early part of 1904 for an abscess of the liver. On the voyage home he got a return of fever and pains in the back. He had no rigors but developed a cough with expectoration of matter resembling pus from a liver abscess. On May 25th on searching the liver for pus nothing was found, the needle striking the scarred tissue of what was once a liver abscess. On the next day pus was found in the pleural cavity, a large drainage tube being inserted. As the temperature did not subside a large opening was made in the chest wall when the lung was seen to be collapsed and pus flowed into the cavity from somewhere high up in the thorax. The exact origin of the pus was not found until after death, when it was seen that the upper and not the lower lobe of the right lung was the seat of abscess. There was no connexion between the sent of the old liver abscess which was quite healed and the abscess in the upper part of the lung In cases of the kind Mr. Cantlie suggested placing a ligature round the root of the lung and removing it.

Sir PATRICK MANSON and Dr. JOHN CATTO (London School of Tropical Medicine) described

A New Nematode.

At a necropsy in Singapore on a Chinaman who died from cholera an abnormal condition of the liver, spleen, mesentery, large intestine, and bladder was observed. On making microscopic sections of the diseased tissues oval, double-walled bodies (ova) varying from 68μ to 70μ long and 34μ to 40μ broad were found. The ova were in enormous numbers. In the large intestine they lay beneath the peritoneum and in the mucosa embryos could be seen developing inside the oval bodies. In an artery of the meso-rectum a minute adult nematode was visible and a free embryo was seen in a blood-vessel of a mesenteric gland. The parasite would seem to be an oviparous nematode of minute dimensions and of unknown species.

NAVY, ARMY, AND AMBULANCE.

WEDNESDAY, JULY 27TH.

Major E. C. FREEMAN, R.A.M.C., read a paper entitled

Camp Sanitation.

He said that camps in war time fell into two divisions: temporary and standing. The tendency nowadays was to replace temporary camps—that was those occupied for from 24 to 48 hours only—by bivouacs, doing away with tents altogether when on the march. Standing camps were congested areas. The inhabitants were crowded in their tents to an extent never met with in civil life. The medical authorities should be consulted on the choice of camp sites. There was nothing to be said in favour of the bell tent and a ridge pole tent was now being introduced. One important point was to secure, if possible, a decent source of water-supply and to take every care to keep it uncontaminated. A system of elevated cisterns could often be improvised, thus doing away with the frequent movements of water-carts. A great point was to teach the cooks to put all the fragments of food and so on into empty tins and not to throw everything on the ground and to trust to sweeping it up afterwards. There was a curious tendency to put the kitchens and latrines close together. The medical officer must see that they were kept as far from each other as possible. If the meat was killed at the camp the slaughter place must be half a mile or so at least away. The pail system of latrines was much to be preferred, as trenches rapidly became filled up and fresh ones had to be dug, thus continually extending the danger area. Under the pail system the excreta were removed from the camp altogether. Refuse from the tents should be collected daily and should be placed in a deep refuse pit outside the camp and set fire to. Cleanliness in the matter of urinals was almost impossible to attain and they must trust to the hospital authorities to treat all enteric fever and suspicious cases with a course of urotropin as a matter of routine before discharging them. Incinerators of various patterns had been proposed for camp rubbish and excreta but it was not probable that any at all would be allowed to form part of the already too great impedimenta of an army. In the general hospitals where there was a daily output of specifically infected excreta a destructor was certainly required, but such elaborate machinery should not be necessary in a camp if its conservancy was properly looked after and filth was not allowed to accumulate. A regiment with two water-sterilising machines, a portable destructor, and a load of fly-preventing metallic latrine seats might be healthy but it would certainly cease to be mobile. Sometimes for camps in peace time the space available was small and constantly in use, as at many rifle ranges and in artillery camps connected with coast batteries. Those restricted sites required special precautions, otherwise the ground became foul without opportunity to recover itself and formed a nidus for pathogenic germs. Those sites should be treated more as barracks than as camps; the latrines should be permanent structures with impermeable cement floors, and worked on the dry-earth pail system. There should be a pipe water-supply with fixed stand pipes, and iron ash bins on concrete bases should be provided for refuse, so that there should be no excuse for fouling the ground. A permanent ablution hut and a shelter for the kitchen were desirable, with fixed drainage channels for the waste water. Every officer should be taught the elements of hygiene and every quartermaster on appointment should go through a short course of instruction in sanitation at Aldershot or other of the great military centres.

Surgeon-Lieutenant-Colonel P. B. GILES, A.M.R. (Bletchley), communicated a paper on

Sanitation in Volunteer Camps and the Disposal of Refuse and Excreta.

He urged that a powerful factor against efficient sanitation in volunteer camps was that the general system of laying out the camp was left to the quartermaster and adjutant, to the entire exclusion of the medical officer and so frequently the best sanitation was not secured. It was quite true that volunteer camps were only intended to be used for a short period by the various units camping, but as it so frequently happened that favourite localities were used year after year more or less all the summer and so became foul, and because the purpose of camping was to give practical instruction, it had always seemed to him that as the dangers of camp life to a great extent were the diseases that were preventable, the proper course would be to start with all the precautions that should be observed if the conditions were actual service against a foe. It should be a *sine quâ non* that all camps should be inspected and reported upon by a medical officer before being actually laid out. Any attempts to restrict and curtail the area of a camp were risky; cramping the area of a camp might not under other favourable conditions at once show anything unhealthy but experience went amply to prove that in all localities in which camps were formed and continued certain diseases would sooner or later occur. The illnesses peculiar to camp were *de facto* such as were common to those who lived in crowded and ill-ventilated localities, and the best way to prevent those diseases was to obtain the best ventilation, cleanliness, disposal of refuse, and disposal of excreta. One medical officer as sanitary medical officer for the whole period of camp should be detailed by which one system prevailed and one standard was adopted.

Surgeon-General C. McD. CUFFE, C.B., said that the whole question of sanitation in camps had been carefully considered in the regulations and the advice of the medical officers given to commanding officers if carefully followed would usually result in the prevention of sickness.

Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON (Ipswich) said that in volunteer brigade camps tent bottoms or floors should be supplied to both officers and men. At present in the Eastern District that was not done even in wet seasons.

Colonel J. E. SQUIRE, R.A.M.C. (Volunteers), said that the principles and practice of hygiene and sanitation should be taught to the officers, non-commissioned officers, and men, for whose benefit sanitation was so carefully studied by the medical officers of the army.

Major T. C. MCCULLOCH, R.A.M.C., said that, so far as the medical service was concerned, a complete chain of sanitary responsibility existed. The principal medical officer of a force was attached to the staff of the general officer commanding-in-chief, to whom he was to give advice in reference to all subjects bearing on the health of the troops and, with the sanction of the general officer commanding, he issued such instructions as he might consider requisite for the guidance of commanding officers, medical officers, and others. In the same way principal medical officers of divisions and senior medical officers of brigades were the responsible sanitary advisers of the officers commanding divisions and brigades, while the chain was completed when it was stated that the medical officer attached to a regiment or other unit was the sanitary adviser of the officer commanding that regiment or unit. The regulations for the army medical services indicated the scope and aim of the sanitary duties which were directed to be carried out in connexion with troops in the field. Those regulations provided sanitary inspectors for the sites of camps and of buildings to be used as quarters, hospitals, or stables, examination into the sanitary condition of towns or villages about to be occupied and their neighbourhood, the care required in collecting, storing, purifying, and distributing water for drinking purposes, the position and regulation of latrines and slaughter-houses, the disposal of refuse, the burial of the dead, and the disposal of carcasses of animals. Daily sanitary inspections of camps were directed to be carried out. Recommendations were to be made, in writing if necessary, as to precautionary measures required for the prevention of disease. When any disease was unusually prevalent every effort was to be made to ascertain and, if possible, to remove the cause, and a daily report of the progress or decline of the disease was to be continued so long as it might be necessary to do so. Those regulations also laid down that the principal medical officer of the field force was to be kept fully informed of the state of health of the troops and of the sanitary conditions of camps and other occupied places. The sanitary responsibility of the medical officer was entirely advisory in character. It was the duty of the army medical service to detail the sanitary measures which should be adopted but it was the duty of general officers commanding and of the officers commanding the various units in the field to take the executive steps to have the measures recommended carried out. With regard, therefore, to Major Freeman's point that the medical officer was seldom consulted when sites for camps were being selected, Major McCulloch said it would be observed, from what he had already said, that the matter was one which the regulations laid down the medical officer was to be consulted about, and when that was not done it was his duty to represent the matter to the officer commanding the troops. In regard to the instruction of the regimental officer and the rank and file in the elements of sanitary knowledge he wished to state that such steps were being taken. Lectures to the cadets at Sandhurst and Woolwich who were to become their future officers were now regularly given, while a more advanced course of lectures in military hygiene to officers at the Staff College was also provided. Specialist sanitary officers had been appointed for duty in England and it was part of the duty of these officers to give special instruction in matters hygienic to officers, quartermasters, non-commissioned officers, and men.

Major T. D. F. DONEGAN, R.A.M.C., then contributed a paper on the

Duties of a Medical Officer with a Regimental Unit in the Field.

He advocated that more power should be given to senior medical officers in the field in regard to the distribution of medical officers under them. He detailed their duties in the field and commented on the equipment necessary for regimental units. He recommended a reduction in drugs and discussed the advisability of having these in "tabloid" form. He exposed the faults in the present field panniers and described an operating table for field use invented by himself. The advisability of having stationary general hospitals was then put forward by Major Donegan and he also urged that general hospitals with mobility and with ample transport should be provided. The equipment of field units should be divided into ordinary, reduced, and emergency scales. He then entered into a full explanation of the faults of the present "first field dressing" and proposed that it should be carried on bandolier instead of sewn in the jacket. In conclusion, he considered the question of the ambulance transport in the field and demonstrated the necessity for two varieties of ambulances. He emphasised the necessity of having ambulance transport in first instead of second line transport, because by that means all ambulance and medical equipment wagons would be under the orders of a medical officer.

Lieutenant-Colonel A. M. DAVIES, R.A.M.C., read a paper on

Sterilisation of Infective Discharges and Utensils on Field Service.

He observed that the only methods of dealing with infective discharges in the field that were likely to be carried out in practice were: (1) burial in either deep or shallow trenches; (2) disinfection by chemicals, then burial; (3) boiling, then burial; and (4) incineration. The first and second methods were not to be recommended if the third or fourth methods were practicable. He compared the third and fourth methods and concluded that in respect to (*a*) quantity of fuel required, (*b*) degree of usefulness or extent of applicability, and (*c*) ease and inoffensiveness of working, the advantage lay on the side of moist sterilisation, where fuel was available. Where fuel was scarce deep burial, after chemical disinfection, should be practised.

Major W. C. BEEVOR, C.M.G., communicated a paper on

The Recruiting Problem.

He pointed out the vital importance of soldiers receiving a training extending over many years and suggested that boys should be enlisted for the army on the same lines as for the navy and formed into cadet companies for each regiment, brigade of artillery, or corps. He said that the increased expenditure would be compensated by saving on the poor rates, Government schools, and so on, and by the general utility of cadet companies who would be available for many duties now performed

by trained soldiers and civil contractors. Parents were now frequently ruined by their boys being thrown on their hands at the age of 14, 15, and 16—postal boys, telegraph boys, &c.—and would be only too glad to get them into cadet corps. That class of boy would develop into the best soldier. A cadet company should be a separate unit in each corps, as was the case with those of the Royal Artillery, and the lads should be trained and nurtured under special supervision. As each member rose to a certain standard of efficiency he would be drafted into various posts—artificers, tailors, shoemakers, medical assistants, grooms, joiners, plumbers, clerks, and so on. A selection should be made for the various requirements of a corps from its cadets as they grew and became efficient. The question of pay and allowances should be settled on the same lines as pertained to the trumpeters of the Royal Artillery. The boys' parents or guardians should be required to enter into a contract with the Government, just as they would when apprenticing a boy to a trade.

Deputy-Inspector-General T. J. PRESTON, R.N., said that parents should consent to their boys enlisting at 14 years of age and subsequently, after 18, to 12 years' continuous service.

Surgeon-General G. J. H. EVATT, C.B., deprecated the flogging of boys in the navy.

Surgeon-Major G. A. HUTTON (Leamington) said that with regard to the remarks made by Surgeon-General Evatt that the boys in the Royal Navy were subject to flogging he entirely disagreed. If there were any ill-treatment public opinion was such in their country that that would soon be remedied.

Major R. C. LEVER, A.M.D., thought that they should offer men the same inducements as in civil life—permanent employment.

Mr. G. S. POPE (Middlesbrough) said it seemed to be implied that the general civil authorities did not employ discharged sailors and soldiers but though trained to rules and regulations he found them peculiarly restive under discipline and they were unfortunately unsteady, frequently immoral, and broke leave. He had found marines more satisfactory.

Major BEEVOR said that Deputy-Inspector-General Preston's statement that the best men came from the neighbourhood of London confirmed the contention that young boys from the labouring classes would give them the best men.

THURSDAY, JULY 28TH.

Colonel D. BRUCE, R.A.M.C., read a paper on

Malta Fever.

He said that it was one of the most tedious and refractory of fevers, lasting in some cases for years, and giving rise in the naval and military forces in the Mediterranean to an amount of suffering, inefficiency, and waste which it was most painful to contemplate. Little had been done for some years past to advance the knowledge of that fever but a determined effort was being made; the Admiralty, War Office, and Colonial Government had joined forces and under the direction of the Royal Society a research into the nature of that disease was being prosecuted. Staff-Surgeon E. A. Shaw and Surgeon R. T. Gilmour of the Royal Navy, Dr. Zammit of the Board of Health, Malta, Major W. H. Horrocks and Captain Kennedy of the Royal Army Medical Corps, and Dr. Johnstone of the Local Government Board, were all working at the subject. The micrococcus Melitensis, which was discovered in 1886, was undoubtedly the cause of the fever. It was a difficult micro-organism to work with on account of its minute size, the slowness of its growth on artificial media, and the difficulty of separating it from other bacteria. Of its habitat outside the body little or nothing was known. It had not up to the present time been found in outside nature unless placed there artificially. As to the conditions under which it could lead a saprophytic life nothing was known. It was known from the statements of Bassett-Smith that cultures kept at 22° C. still retained vitality after 14 months; that it lived in milk for some three weeks, and in tap-water for three days only. In ordinary sea water it appeared to die off almost immediately. Bassett-Smith stated that it could live in urine from three to five days, and Horrocks gave five or six days. In a dried condition it retained its vitality for much longer periods, and Horrocks had made the important observation that it could live in dust for at least 69 days and on dried fabrics for a longer period. It had not, however, been found up to the present in the air or dust of infected places, but that point was receiving especial attention. No light had as yet been thrown on the possibility of the micro-organism having under natural conditions hosts other than man, but if goats which crowded the cities and villages of Malta could grow it in their bodies and pass it out in the urine a never-failing supply of infection would be present. The mode of entrance of the micrococcus Melitensis into man was a subject of which they were very ignorant. Did the micrococcus gain entrance by the alimentary canal, the lungs, tonsils, mucous membrane of the nose or eye, or through the skin? Feeding experiments on monkeys carried out by Dr. A. E. Wright and others had been invariably negative. Nothing was known of the effect of inhaling dust containing the micrococcus Melitensis, but experiments were going on at present. There was one case of artificial inoculation in man in which the conjunctiva was said to have been the point of entrance. The smallest quantity of the virus introduced under the skin would give rise to the disease, as many accidental inoculations in the laboratory testified, and that brought up the question as to whether it was possible that the disease might be conveyed from the sick to the healthy by means of biting insects, although, in his opinion, it was very unlikely that it was an insect-borne disease. Dalton, Gilmour, and Bassett-Smith had all attempted to separate the micrococcus Melitensis but had failed to do so. He was glad, however, to be able to report that he received a telegram from Malta a few days ago, signed by Major Horrocks and Captain Kennedy, saying: "Found 26 colonies micrococcus Melitensis from one-third c.c. urine." That was an important observation and might be considered in connexion with the retention of vitality for long periods of the micro-organism. Up to the present the micrococcus had not been isolated from the sputum, the expired air, the sweat, or the intestinal contents. Another mode of exit was from the blood by means of biting insects. That the micrococcus existed in the blood had been shown by Gilmour and Shaw and by Dr. Zammit. Gilmour especially had worked at the point and had repeatedly isolated the micro-organism from the blood. But up to the present the evidence went to show that it was only found in very small numbers in the blood; according to Gilmour not more than one or two micro-organisms per cubic centimetre could be found.

Fleet-Surgeon P. W. BASSETT-SMITH, R.N. (Haslar), communicated a paper entitled

The Etiology of Mediterranean or Undulant Fever from a Naval Standpoint.

He stated that he had been able during the last four years to study the disease from both its clinical and laboratory aspects, owing to the large number of cases invalided to Haslar annually from the Mediterranean. The deductions he made from those inquiries were: (1) that Mediterranean fever showed no sign of decrease in its incidence in His Majesty's Navy on that station; (2) that both officers and men suffered severely but that the percentage of young officers and men in early adult age was proportionately great; (3) that all ships appeared to be affected equally according to the time spent by them at Malta harbour, the permanent harbour ships giving the most cases; (4) that it was very frequently the case that men contracted the fever while in Malta Hospital when admitted for other diseases and that the nursing staff in attendance on them there showed a tendency to develop the disease, but whether that was due to its endemicity or to direct infection there was no proof; (5) that the greatest incidence of cases was during the months of May and June; (6) that in the fleet there was no evidence of infection being received from the shore other than through the agency of wind-carried germs; (7) that the organism could retain its vitality for a considerable period when desiccated but that it died in about five days in sterile fresh and sea water and in urine, but remained active long in sterile milk; (8) that the organism was very virulent in laboratory cultures, readily causing attacks when taken in by the mouth or through accidental inoculation; (9) that the organism was present in the peripheral blood in all cases during the early stages and in severe pyrexial relapses and that in the afebrile intervals and following cachexia it was not demonstrable, but that in no case was it very abundant; (10) that the disease might remain latent for several months and relapses might occur for a period of two years at least, but that when once completely cured it gave an immunity from further attacks; and (11) that though infection by means of blood-sucking insects was

possible, the evidence would lead to the belief that in the presence of bad sanitation where the disease was endemic infection was probably conveyed in dust by winds mostly in the hot dry months following the rains, and that it gained access to the patient through some breach of surface, probably in the throat, and that, as a rule, when perfect health had been established after an attack of the fever, an immunity was acquired against further infection.

Professor S. GRECH said that as a general practitioner in Malta he was glad to make a few remarks. He protested strongly against the nomenclature—Malta fever; it might give to Malta a bad name which might keep away winter visitors. That same fever had been observed in Sicily, Naples, and all the other towns along the Mediterranean.

Major T. H. F. CLARKSON, R.A.M.C., and Deputy-Inspector-General PRESTON having spoken, Colonel D. BRUCE replied.

Fleet-Surgeon JOHN LLOYD-THOMAS, R.N. (Portsmouth), read a paper entitled

A Naval Surgeon's Notes.

He drew attention to some points which concerned the naval surgeon and were incidental to modern methods of big-gun firing at sea. He thought the ear suffered more damage from big-gun firing than any other part of the body. He briefly considered the part each section of it played in conveying air vibrations. If a typical case of ruptured membrana tympani were seen immediately after the accident from gun fire smart local pain was complained of and the auroscope revealed a minute fissure with red raw edges and a drop of blood at its lower end. If the ear were merely plugged with wool and boric powder, the patient being at the same time sheltered from further concussion, the drum healed by first intention. "Irreparable deafness," commonly called "gun deafness," was a condition regarding the pathology of which too little was known. It existed with or without any visible sign, such as rupture of the drum, and both sides of the head were generally equally affected. Tinnitus was a very common subjective symptom. The outer ear revealed nothing when the drum was intact. The Eustachian tube might be quite patent. The deafness varied in degree but was seldom, if ever, complete. It was to be regretted that up to the present no device had been found that would sufficiently protect the ear from the violent concussions caused by the modern gun. To protect the membrana tympani cotton-wool was useful as diminishing the violence of the air waves proceeding in its direction, and for some time a doughy substance had been largely used for plugging the external meatus and it was recommended to keep the mouth slightly open. Experiment showed that if the irregularities of the auricle were filled with wax or oil the intensity of sound was weakened, and he had advised vaseline to be tried for this purpose but with doubtful results. Nipple-shaped india-rubber plugs had been used. The direction of the meatus externus to the source of sound was material. If the side of the head was directly opposite to an explosion the ear would suffer a more violent concussion than if the full face were opposed to it. A gun's crew, however, were so variously disposed that no definite lines could be laid down for observance.

Surgeon-Major C. R. KILKELLY, C.M.G., followed with a paper on

The General Hospital in War: its Working and Staff.

War hospitals were of three kinds: the field, stationary, and general hospitals. A field hospital was essentially a mobile unit. Stationary hospitals were improvised constructions scarcely deserving the name of hospitals. They were of the nature of rest camps, detained wards, or converted field hospitals. General hospitals were established to receive all kinds of sick and wounded evacuated from field hospitals to treat and care for them in accordance with the latest and best methods of modern science. It was impossible to predict what kind of cases or in what numbers sick and wounded would be sent to a general hospital. It must therefore be capable of expansion in all its parts and capable of sorting and receiving the various groups of diseases in appropriate wards or specialised sections. Hospitals were often suddenly required at places where hitherto stationary hospitals had been established, owing to the outbreaks of epidemics, the formation of standing camps, or as a preliminary step to the formation of a general hospital, and a general hospital should be able to detach one or more complete sections for work at such places if within the region of its "sphere of influence." In order to combine efficiency with economy the model general hospital should be organised on about a 550-bed basis (500 beds for non-commissioned officers and men and 50 for officers), capable of being doubled or trebled in size, divided up into appropriate sections, and with a convalescent camp attached. In regard to equipment he had found the new pattern tortoise tent 20 by 24 and the Indian pattern E.P. tent the most suitable. The present hospital marquee was a most defective tent; it was heavy, of a bad shape, and easily blown down by a gale of wind. The equipment generally should be carefully selected and constructed in "standardised" patterns. The Red Cross committee could do useful work in that line by obtaining and exhibiting selected standardised patterns of equipment and arranging with firms to supply them at short notice. The equipment must include in an efficient general hospital a destructor for burning refuse and utilising the heat to generate steam in a boiler. The steam could then be utilised in a disinfector for disinfection by saturated steam under pressure and also in a turbine engine and dynamo for electric lighting, x-ray work, cooking, baths, and sterilising milk.

Dr. S. HAMILTON (Newport, Mon.) read a paper entitled

Is the Widespread Slight Training in Ambulance Work Beneficial to the Community or would it be better to make the Training more thorough at the Expense of Numbers?

In the course of his remarks he suggested that it should be an instruction to all examiners to make the examination more testing on the practical application of first aid; that those interested in ambulance work should be urged to organise divisions or corps of the St. John Ambulance Brigade in towns where none already existed (this would bring the certificate holders in these towns together for practice once a month and thus keep them efficient); that the St. John Ambulance medallion should be given only to those certificate holders who afterwards joined the brigade and passed the annual examination—the service badge and the service medal of the St. John Ambulance Brigade should be continued under the regulations at present in force; and that factory owners and large employers of labour in towns where ambulance classes were held should be invited to offer challenge cups for annual competition which would be a great stimulus to the various ambulance teams to keep in training.

Mr. POPE thought in regard to ambulance work that the chief defect of the system was the laxity of the examiners who did not carry out the practical part of the examination thoroughly and who passed candidates too easily.

Dr. C. H. MILBURN (late Deputy Commissioner of the St. John Ambulance Brigade) thought that wherever a general hospital and a brigade unit existed in the same town opportunities should be provided for giving the ambulance men, under proper control, instruction and practice in systematised general nursing and orderly work. On the question of giving a large number of men a slight knowledge of first aid or a smaller number a more thorough training and education in ambulance work he thought that every recruit on joining the services should receive some first-aid instruction but that the men of the Royal Army Medical Corps should have the most thorough and extensive education possible.

Deputy-Inspector-General PRESTON said that the St. John Ambulance Brigade men were more efficient than Association men as they kept up their work and were qualified in nursing. The Admiralty had at present preferred Brigade men as being better trained.

FRIDAY, JULY 29TH.

Staff-Surgeon F. H. A. CLAYTON, R.N., sent a paper on

The Organisation of the Treatment of Syphilis in the Navy.

He suggested that men who had contracted syphilis should have the consequences of their misfortune impressed upon them by giving them a small pamphlet of advice, and by proper care of the teeth and so on should so far as possible be prepared both for combating the disease and for preventing any ill-effects of mercury; that their attendance for observation and treatment should be made part of routine both in ships and shore establishments and proper records of attendance kept; and that such records should include the dates and nature of symptoms and treatment and any other points of value in order that, to insure continuity, the requisite information might be sent with the patient on transfer to another ship.

Colonel SQUIRE contributed a paper on

The Organisation during Peace of Civil Medical and Ambulance Aid to insure an immediate Reserve of Trained Assistance on the Outbreak of War.

He said that in a war of any magnitude it was necessary to supplement the military organisation for the care of the sick and wounded by civilian aid. Such aid was essentially of two kinds—surgeons, nurses, and orderlies receiving pay through the War Office and *personnel* and stores provided by voluntary subscription. Voluntary aid might be wasteful if no regulations for its employment had been previously laid down. Organisation during peace was essential to insure the best provision in war. The Central British Red Cross Committee had been instituted as the organising body for civilian aid with troops in war. Surgeons and nurses adequately trained in their professional work were to be obtained in sufficient numbers to allow of selection but in order to obtain at short notice the best professional aid selection must have been made previously. A list should therefore be kept at the War Office of suitable persons willing to serve if required. A roll of men willing to serve as orderlies might be kept in the same way, the special qualifications of each being entered against his name. Conditions of service and a scale of pay for the various duties should be laid down. For the *personnel* serving under some authorised voluntary aid society or committee the conditions of service and rates of pay would be drawn up by the body engaging their services but would have to come within the terms of requirements previously formulated by the Central Red Cross Committee and communicated to the body offering aid. Hospital equipment, surgical stores, medicines, and so on, were needed in war greatly in excess of peace requirements. Many of these were perishable and could not with advantage be kept in store. By previous arrangement with large firms almost everything needed could be procured as required. What was necessary was a list, kept at the War Office, of firms able and willing to supply materials. The supply of comforts both for the troops in the field and for patients in hospitals came within the scope of voluntary aid. A list of articles which would be especially acceptable should be drawn up and sent to all applicants at the beginning of a campaign. The organisation of that department and the storage and distribution of those gifts should be carried out by some authorised organisation or society acting under the Central Red Cross Committee. That was provided for in the regulations of the committee. Supplementary hospitals and hospital ships and trains might be organised, equipped, and maintained by voluntary subscriptions under regulations to be drawn up previously by the Central Red Cross Committee. Voluntary efforts should also provide assistance to the sick and wounded whilst journeying along the lines of communication and on arrival at the base or at home. Accommodation at suitable places should be arranged for convalescents at home. All those matters required carefully arranging and organising beforehand and it was essentially the duty of the permanent voluntary aid societies—such as the Red Cross Society—to perfect such organisation during peace. It was desirable that there should be some organisation, with branches throughout the country, by means of which individuals wishing to help when a war broke out could at once be brought into touch with a central body which was in direct communication with the War Office. These local committees should be permanently established under some central organisation—preferably not connected with the War Office—with its head office in London. As the basis on which to build up the organisation that was required they had the British Red Cross Society (British National Society for Aid to the Sick and Wounded in War), the St. John Ambulance Association, the St. Andrew Ambulance Association, various nursing associations, and, since 1898, the British Central Red Cross Committee. The British Red Cross Society, founded during the Franco-Prussian war in 1870, hibernated during periods of peace and only woke to activity when a war broke out, instead of spending the leisure time of peace in organising for war. The St. John Ambulance Association, primarily originated to provide instruction in first-aid treatment in case of accidents in civil life, had comparatively recently considered the possibility of providing supplementary aid to the troops during war, but when the South African war commenced it had made no provision for training in the duties required by orderlies and nurses for military service. Nevertheless the association was able to furnish a large number of willing, though imperfectly trained, men to the army in South Africa. The St. John Ambulance Association was now officially recognised by the Central Red Cross Committee as a body from which hospital *personnel* could be obtained during war. Where the present machinery for the organisation of civilian aid seemed to be faulty was in the chain of connexion between the War Office on the one hand and the public which supplied the *personnel*, service, money, and gifts which the War Office would utilise in war on the other. The Red Cross Society and the various ambulance associations were private organisations independent of the State machinery. The public had not always been in exact accord with army methods of organisation and might possibly be more disposed to send money and gifts to the troops through some organisation outside the army than through a committee directly connected with the War Office. The representation of certain organisations (Red Cross Society and St. John Ambulance Association) on the Central Red Cross Committee seemed calculated to arouse that jealousy which should be avoided. It would seem desirable that the Central Red Cross Committee—consisting of military and civilian members—should be advisory rather than executive, deciding on the requirements and drawing up regulations under which voluntary aid could be accepted by the army but leaving it to a voluntary society to organise and provide the aid. The committee of that society would be the one and only means of communication between the various voluntary aid societies and individuals offering aid and the War Office. When war broke out the officials at the War Office, who had their hands full with the work of mobilisation and all that that entailed, would not then have its time occupied with the various suggestions and offers of help of the different societies, &c., but would be relieved of that by the committee. The British Red Cross Society seemed to be the body which should organise the voluntary aid during peace and it should establish local centres throughout the country. In war time it might well carry out the duties allocated to it by the Central Red Cross Committee in its present regulations, one of the most important of those duties being the collecting and distributing of funds. The main thing required at the present time was the organisation of local committees throughout the empire by means of which individuals and societies offering help in time of war might be brought into touch with the Central Red Cross Committee, representing the army. The Central Red Cross Committee was considering the matter. But the Central Red Cross Committee was not the best body to undertake the work, it should be in communication with one other committee only, not with many which would multiply its work and correspondence when war broke out. A single "buffer" committee, purely civilian, should stand between the Central Red Cross Committee and local committees or individuals. The proper body to take that important position was obviously the British Red Cross Society. The British Medical Association, with its branches all over the empire, might well serve as a means of forming a truly Imperial Red Cross Society. Through the British Medical Association it would be possible to find a medical man in each county in England and in different districts in India and the colonies who would act as organising secretary for his district and form a local committee. A central organising committee in London would bring all into touch and, with representatives of the National Aid Society, St. John Ambulance Association, and similar bodies, would form the direct communication with the Central Red Cross Committee. The latter committee would decide upon the requirements, it would be for the new committee (Imperial Red Cross Committee) to see that those were forthcoming when needed.

Major FREEMAN said that having had the honour of being registrar of a general hospital for 17 months in South Africa where their whole staff except 20 men consisted of volunteers and St. John Ambulance Brigade men, he was very glad to have an opportunity of paying a tribute in that section to the conduct of those men in the field; they worked quietly and unostentatiously, and died, too, in the cause of humanity during those months of pestilence in Bloemfontein, and their work had received scant public recognition. The volunteers were the most useful because they stayed with them all through the campaign. The St. John's men were perhaps better trained but they stayed too short a time.

Major MCCULLOCH said that urgent need existed for a thorough organisation of the voluntary aid resources of the

country. Their attention naturally turned to the great struggle which was going on between Russia and Japan. Both countries possessed Red Cross societies and Japan had a particularly well-organised one. The Red Cross Society of Japan had its origin in 1877 and from a comparatively small beginning it had steadily grown both in numbers and in resources till now it had a membership of over 900,000, which was equivalent to 1 in every 45 of the population, and its income during 1903 was over £300,000 sterling. In addition to that it possessed a large capital sum as well as buildings and other immovable property. The organisation which Japan had built up in time of peace must be of incalculable benefit to the country now that the heavy burden and strain of a great war had come. Was not that a great object lesson for them? Here they had Japan, another island kingdom, and one which had only quite recently taken a prominent place in the comity of nations, and yet it had built up for itself a rich, powerful, and widely spread Red Cross organisation. Up to the beginning of the late war in South Africa they in Great Britain possessed no definite Red Cross organisation which aimed at being an active organising body in time of peace. There never had been any lack of interest or sympathy on the part of the British public when the care and welfare of the sick and wounded in war were in question. Their previous experience had always been that, in presence of a state of war, money, subscriptions, donations in kind and offers of personal services had been freely given. Their own and continental wars had, however, offered many valuable lessons of the necessity of having ready beforehand an organisation capable of dealing with those voluntary offers and so saving the misdirection of energy, failure of purpose, and waste of money and material that had occurred through want of such organisation. Without organisation, confusion, overlapping, delay, and waste were the inevitable result. Experience had proved, moreover, that voluntary aid in time of war, unless properly incorporated with the military medical organisation of the country, was not only a doubtful advantage but it might even become detrimental—a hindrance instead of a help. An outburst of popular sympathy might always be relied upon and should be reckoned with beforehand, so as to render voluntary aid a valuable supplement to the work of the Army Medical Service. On whatever system an army was organised the system must have as a basis the possibility of rapid expansion. The Government did not maintain, and, he thought, could not be expected to maintain, medical and surgical provision in time of peace on a scale sufficiently adequate to meet the great demands which might suddenly spring up on the outbreak of war. So in future as in past wars voluntary aid would find abundant opportunities for supplementing the resources of the regular service. In any scheme for extending Red Cross organisation in England the needs of the navy should also be kept in view. They had had no great naval war in recent times to stir up popular sentiment and sympathy by the arrival of large numbers of naval sick and wounded on their shores. But bearing in mind their position as a naval power and the suddenness with which war conditions sometimes arose the possibilities were such that preparations to cope with them should be organised beforehand on a well-considered and premeditated plan. The Central British Red Cross Council had fully appreciated the fact that in organising the voluntary aid resources of the country the wants of the navy as well as of the army should be kept in view. The Admiralty was approached in the matter and he was glad to see that Inspector-General Preston was with them at that meeting as he represented the Admiralty in the Central British Red Cross Council was perhaps not as widely known amongst members of the British Medical Association as ought to be the case, the present appeared to be a good opportunity of stating shortly its formation, constitution, and objects. In England the danger of the absence of any central organisation of Red Cross societies in touch with military requirements was clearly pointed out in the report submitted to the Secretary of State for War by the British official delegate to the Sixth International Congress of Red Cross Societies which was held in Vienna in 1897. As had been stated in that report, voluntary aid, such as would be forthcoming in abundance in the event of their being involved in an international war, would come upon the military authorities in the form of a mass of unorganised and untrained elements probably so unsuited to the actual requirements of the moment that, for a time at any rate, the administration of the regular Army Medical Service would be considerably hampered and embarrassed. After the publication of that report in 1898 a meeting of representatives of the National Society for Aid to the Sick and Wounded in War, of the St. John Ambulance Association, and of the Army Nursing Reserve was held and it was resolved definitely to form a permanent Central Red Cross Committee for the British Empire and its dependencies and to ask the Secretary of State for War to recognise the committee officially. The committee was started in January, 1899, with official recognition and at the close of that year it had to organise the voluntary aid which was at once and abundantly in evidence for the sick and wounded of the South African war. The Central British Red Cross Council had on it representatives of the National Society for Aid to the Sick and Wounded in War, of the St. John and St. Andrew Ambulance Association, of the Army Nursing Service Reserve, of the Admiralty, and of the War Office. Its objects were to coördinate the help that could be offered by the different voluntary aid societies both at home and abroad, to extend Red Cross organisations by the formation of local branches throughout the Empire, and to be the means of communication between those local organisations and the Admiralty and War Office. The first duty of the council was to draw up a series of regulations defining the manner in which the voluntary aid resources of the country might be utilised to supplement the Army Medical Service in time of war. The outbreak of war in South Africa prevented any progress being made in this direction. When first established it was intended to take steps for the formation of local committees throughout the country whose object it would be to organise in time of peace the voluntary aid resources of districts and towns. The work had been again taken up and the council had now a scheme under consideration of which the broad outlines were as follows: 1. It was suggested that in England there should be a district committee for each county, or in the case of the larger counties for a division of the county, and that lord lieutenants should be asked to organise such committees. 2. It would probably also be advisable to have separate branch committees in large towns (say in towns having a population of over 100,000). 3. All schemes authorised and prepared by district committees with a definite object, such as grants in aid, either in money or material, towards providing hospital ships, hospital trains, and other means of transport, auxiliary hospitals, or convalescent homes, were to be submitted to the Central British Red Cross Council. 4. The extension of Red Cross organisation would not stop short at the formation of local branches in that country. It was believed that branches would be formed on similar lines in India and the Colonies. In England arrangements had been completed for the organisation of the St. John Ambulance Brigade into companies of stretcher-bearers for service at home, and ten companies of 58 men each were ready for mobilisation. The St. Andrew Ambulance Association was also working in the same direction and it had started a Red Cross branch which was taking up the question of the establishment of local committees in the counties and principal towns of Scotland. It might be mentioned that a further important step was taken in 1902 when the Foreign Office intimated to all foreign chancelleries that the Central British Red Cross Council was the only body authorised to deal with Red Cross matters throughout the kingdom and empire.

Surgeon-General CUFFE said that an essential requirement was an Army and Navy Nursing Reserve of skilled men and women for home defence as well as for service abroad.

Deputy-Inspector-General PRESTON remarked that too much reliance should not be placed on deliveries from contractors in national emergency. Medical stores for hospital ships were kept in readiness for immediate issue by the Admiralty.

Surgeon-General W. K. REYPEN (President of the American National Red Cross Society) gave an account of the work of that organisation during the war with Spain.

Surgeon-General KEOGH thought it was clear that the most urgent demand which the Royal Army Medical Corps would in the future make upon the voluntary aid organisations would be demands for trained *personnel*.

Colonel SQUIRE said that if they were ready for a scheme and his attempt would be acceptable he was willing to draw up a scheme of organisation for civilian aid or even to act as organising secretary of such a "buffer" committee as he had suggested.

THE LANCET.

LONDON: SATURDAY, AUGUST 27, 1904.

The British Science Guild.

SIR NORMAN LOCKYER in the address which he delivered last year as President of the British Association for the Advancement of Science called attention to the deplorable degree to which the teachings of science were neglected or ignored in many departments of our administration. His words happily fell upon good ground and there seems every prospect that they will bring forth a harvest in due season. An organisation is now being formed, under the name of the British Science Guild, with the object of insisting upon the importance of applying scientific methods to every branch of the affairs of the nation, and the organising committee is at present engaged in communicating with those in Britain within and beyond the seas whose assistance will be valuable in the endeavour to carry out the purposes of the Guild. The committee itself is a strong and representative one, including many names distinguished in science or in the despatch of public business, and it has put forth a manifesto declaring its objects to be: (1) to bring together as members of the Guild all those throughout the empire interested in science and scientific method in order, by joint action, to convince the people of the necessity of applying the methods of science to all branches of human endeavour and thus to forward the progress of the empire; (2) to bring before the Government the scientific aspects of all matters affecting the national welfare; (3) to promote and extend the application of scientific principles to industrial and general purposes; and (4) to promote scientific education by encouraging the support of universities and other institutions where the bounds of science are extended or where new applications of science are devised. The attainment of these objects will be sought by four principal means—by publications, by meetings, by conferences and lectures, and by deputations; and while all British subjects, both men and women, are eligible for membership the committee enumerates certain classes from which recruits are specially to be expected. These include the British and colonial legislatures, the members of various local authorities, scientific and literary societies, commercial and industrial chambers and organisations, the learned professions, universities, educational bodies, university graduates, and representatives of labour. The net is widely cast and it is sincerely to be hoped that the haul will be of corresponding magnitude and value.

It is trite to observe that science in this country and among what are called the governing classes has hitherto been almost entirely neglected or, still worse, has been despised with the contempt of ignorance. The average politician, scraping in the muck-heap of party schemes and devices and glorying in any distortion of facts by which his opponents may be prejudiced, has no eyes for any jewels of truth accidentally lying in his way, and no power of appreciating their value even if they chance to attract his notice. His training, as a rule, has left him absolutely destitute of practical scientific knowledge, and especially destitute of the knowledge that physical laws do not admit of being made the subjects of compromise. This is not understood by the public official who, to avoid unpopularity, permits what he would describe as a "small" transgression of sanitary law to remain unrectified and unpunished, or who would allow such questions as the utility of vaccination to be settled in accordance with the clamour of the ignorant. Ministers have seen the political horizon become cleared from various clouds which at one time presented a threatening aspect, and they see no valid reason why the clouds pointed out by "doctors" should not in like manner undergo dispersion. It is in relation to disease, of course, that the scientific ignorance of public men chiefly forces itself upon the notice of the medical profession, but it is not less conspicuous, and probably is not less hurtful, in other departments of activity. We have lately seen an expedition despatched to Tibet, without proper anticipation of the difficulties consequent upon a combination of low temperature and high altitude. A great part of the history of the South African war is a history of difficulties which science would have foreseen and provided against, and which were counteracted as best they could be by an expenditure that few nations but ourselves could have borne and from the effects of which every class of the community is at present suffering. The same conditions may be traced in almost every department of the public service and certainly in a very large proportion of public appointments. Knowledge and competency are less helpful to a career than political or family influence, and "ladies interpose" in the present day as they did in the time of CHARLES II., with different tactics, perhaps, but with similar results. The Guild will, indeed, do good service to the empire if it can maintain its intended entire independence of party politics and can at the same time press home upon the popular intelligence the absolute necessity of exact knowledge for the service of the State.

Everyone who is at all conversant with the bias of public opinion must be well aware of the tendency of unscientific people to resent the claims of definite knowledge. They set up the claims of "common sense" in opposition and point to alleged errors on the part of men of science, or to differences of opinion among medical men as reasons why the statements of both these classes may be safely disregarded by practical men. We are not without fear that the Presidential Address recently delivered by the Prime Minister may be thought to afford some support to this delusion. His account of changes in the views taken of certain natural phenomena may be regarded as justifying the common attitude of incredulity or of contented ignorance. With this aspect of the case the Guild will find itself compelled to grapple, and it may probably do so successfully by pointing out that the science required in the conduct of public affairs is that which is conversant with phenomena and with the laws which govern their sequence and their relations. In these departments of inquiry we

have the only certainties which life affords. By the aid of these certainties eclipses are predicted and ADAMS and LE VERRIER were enabled to announce the existence, and to discover the position, of the previously unknown planet Neptune. The changes of view discussed by Mr. BALFOUR have no reference to phenomena but only to the conditions of the matter through which phenomena are displayed, and they have at present absolutely no bearing upon the practical conduct of life. They neither strengthen nor weaken the case against the departmental officials responsible for the equipment of our troops, and they must not be employed as furnishing an argument against the utility and applicability of science in man's dealings with his environment. It is this homely and practical aspect of the case which the Guild must endeavour to force upon the attention of the public, and it is neglect of this aspect which has been the cause of incalculable sickness and mortality, of innumerable failures afterwards retrieved, if at all, only by prodigality of treasure and of life.

The Metropolitan Hospital Sunday Fund Collection.

THE report of the distribution committee of the Metropolitan Hospital Sunday Fund for 1904 and the discussion which followed its presentation at the meeting on August 9th raise several questions of great social and medical importance. There has been a marked tendency in late years for the Fund to increase. The public, led so earnestly by His Majesty the KING, by an unfailing succession of sympathetic Lord Mayors of London, and by constant efforts on the part of the various ministers of religion, have been aroused to a deepening sense of responsibility. It is only right, too, to say that the energy of the secretary of the Fund and his inventiveness in devising new forms of appeal have contributed not a little to the growth of the Fund; nor must Mr. HERRING'S splendid generosity be forgotten. It is painful, therefore, and a little surprising to have to notice for 1904 a falling off of £2000 in the amount to be distributed, and to think that this means so many hundreds a year less to the numerous hospitals and dispensaries by which the benevolence of the public to the sick and wounded poor is administered. There should be much searching of heart among the different sections of the community as to the blame for such a falling off. There is a ready and offhand excuse—we have heard it—"Times are bad, trade is depressed, dividends are low, property is depreciated." Such statements cannot be contradicted, but they are entirely inadequate as an excuse for pinching and starving the hospitals. There is a time to make money and there is a time to spend it. It is the advantage of a country like this that there is always a reserve of wealth practically unaffected by the fluctuations of trade; whole classes of our population are conscious of little or no abatement in their luxuries. It is not to these classes alone that we must look for the better support of our hospitals, and some speakers at the Mansion House thought that the strength of the Fund lay in the support of all classes. But it takes a GUY to make a Guy's Hospital. Very little imagination will show that the poorer classes cannot do much for the maintenance of our great hospitals and that the gold for this must mainly come, and should come, from accumulated wealth—from men with reserves. We have a faith in the generosity of rich men which leads us to believe that if only they can be assured that our hospitals are well and carefully administered they would out of their abundance adjust the adverse balances that so harass those who have to find the ways and means to keep hospitals open. Heaven forbid that we should seem to belittle small contributions. As has been pointed out more than once in our annual supplement a voluntary rate of one halfpenny paid by the metropolitan public would at once more than double the amount of the Fund. But this universal feeling of indebtedness to our great charities is not in the least likely to take place, and for practical purposes it seems that we must look expectantly to individual efforts.

The attention of the councils of the great hospital funds—King Edward's Hospital Fund for London and that of the Metropolitan Hospital Sunday Fund—has been much given of late towards the double end of making hospitals efficient and of moderating the rate of their expenditure. The distribution committee of the Metropolitan Hospital Sunday Fund, in the report for 1903, said that "its special attention had been directed to the constantly increasing expenditure of hospitals in the maintenance of patients," and showed how this expenditure in ten years had increased in 21 of the principal hospitals at the rate of 4*s.* 3½*d.* per week per occupied bed. The committee reverts to the subject in its recent report and shows that it is as determined to compel economy in hospitals as to urge liberality on the contributing public. Happily, it is already able to report that after conferences with some of these hospitals considerable reduction of expenditure has been effected. It is only fair to say that the rate of expenditure of our general hospitals in point of economy will bear a favourable comparison with that of those hospitals which have the deep pocket of the State to rely on for their support. This is well shown in the very interesting report of the managers of the Metropolitan Asylums Board for 1903. Enteric fever is one of the most expensive diseases treated in general hospitals, but it appears that the cost of treating such patients in the hospitals of the Board compares unfavourably with the cost for the same public service incurred by the general hospitals which are maintained by voluntary subscriptions. The council of the Metropolitan Hospital Sunday Fund has made rules which are meant to reduce the abuse of the out-patient department and which have had some success. There is still room, however, for much more care in the work of this department. A glance at the admirable statistics of the Fund will show that there is great variation in the different hospitals in this respect, some expending only 1*s.* 6*d.* per head on each out-patient, others, as the Cancer Hospital, spending 30*s.* But a more important point in genuine economy than cutting down the expenditure per head in the treatment of out-patients is the efficiency of means used for the exclusion of persons who have no claim on the charity of the public. The Metropolitan Hospital Sunday Fund will do well to use

its influence to curtail the proportions of the overgrown out-patient departments of hospital work, especially in the way of discouraging expenditure on huge building operations and the admission wholesale of unfit persons. The out-patient departments of our hospitals ought to be reserved strictly for the sick and injured poor. The work of the general practitioner should not be discharged there gratuitously to the benefit of well-to-do people.

Not altogether unconnected with the question of economy is the action of the Metropolitan Hospital Sunday Fund in withholding its grant for this year to the City Orthopædic Hospital, Hatton Garden, which in point of mere numbers is more important than the other orthopædic hospitals with which amalgamation is being recommended. On general principles the authorities charged with the distribution of the Fund deprecate the multiplication of special institutions. The premises of the hospital are not model ones for hospital purposes and are not situated in a locality favourable for the pure air and light treatment of a set of cases which peculiarly need such advantage. There is much to be said for one large metropolitan orthopædic hospital, with a country branch to which suitable cases could be sent. But the withdrawal of the grant from the City Orthopædic Hospital, against the management and financial conduct of which not a word has been said as far as we know, has necessarily caused much pain, while the letter which we print in another column from Mr. J. A. PHILLIPS makes out a good case for the institution. We know what pains the distribution committee takes in respect of the awards, and feel that criticism may seem ungracious towards its delicate work, but we have come to the conclusion that, at any rate temporarily, the City Orthopædic Hospital should have received a grant.

The Physiological Aspect of the Administration of Chloroform.

IN the Section of Physiology at the British Medical Association, a most interesting debate upon the subject of chloroform anæsthesia was introduced by Sir VICTOR HORSLEY, and a short record of the views of the many well-known speakers was published by us last week. We hear from various sides, and not infrequently, that the employment of chloroform as an anæsthetic is destined to diminish, though some practical anæsthetists do not hold this view. Chloroform as an anæsthetic has certainly earned the unenviable reputation of being "dangerous," yet there are many with a right to be heard who assert that not only is chloroform the most effective anæsthetic but that attention to certain rules can minimise the dangers of its administration to vanishing point. Whether or no its administration is becoming less and less resorted to, it is undoubtedly true that never have the administration and action of the drug been more rigorously subjected to investigation than at the present time. The task set before the anæsthetist when he is required to produce deep anæsthesia with chloroform is one more difficult than those who set him the task seem sometimes to picture to themselves. The channel along which the administrator of chloroform is asked to steer the life of the patient is a very narrow one. He has to employ a powerful poison which acts upon all the nerve cells of the brain and spinal cord, and at the same time the nerve cells of the respiratory centre and the nuclei of the inspiratory muscles have to be safeguarded. This is, at any rate, the physiological theory, and physiologists premise that the chemistry of nerve cells differs from cell group to cell group. If sleep is held to furnish a rough example of what is required in chloroform anæsthesia, the distinction which the chloroformist is required to observe with his drug between the respiratory nerve cells and the rest of the nervous system is one that, were it not safely accomplished over and over again, might seem impossible from *a priori* considerations. For chloroform narcosis differs from sleep in this, chloroform is a "protoplasmic poison" potent to destroy life in every kind of living cell.

Assuming that the selective effect required in surgical anæsthesia is only a particular depth in a steep gradient of chloroform depression the lowest stage of which is death, it would follow that safety lies in perfect grading of the dosage. But not only is dosage in the administration of chloroform a very different thing from the simple dosage of a drug introduced by ordinary methods into the bulk of the body, but practical anæsthetists are not agreed that the solution of the matter lies entirely in the question of dosage. The first essential for accurate grading of the dosage is thorough knowledge and control of the percentage of chloroform vapour in the inspired air combined with normal freedom of expiration. These requirements are met, it is claimed, by an inhaler recently devised by Mr. VERNON HARCOURT, the distinguished chemist, which delivers to the patient a percentage vapour of chloroform in air, the maximum tension of which is 2 per cent. It is claimed that in ordinary circumstances this concentration of the vapour suffices for surgical anæsthesia. The induction of the narcosis may then be slow but that need not be a danger, for it has recently been suggested, by experiments upon the isolated heart with certain artificial circulating fluids, that the mode of action of chloroform is not cumulative. Depression of the heart beat is a salient effect of chloroform action when the drug is "pushed." Whether this is due to a direct action on the muscle or on the network of nerves in the heart wall is not at present clear. The fact remains that the heart's activity is easily depressed by chloroform. Yet, even when the action has been pushed to extinction of the beat and maintained at that point for half an hour at a time, the experiments of Professor SHERRINGTON and Miss SOWTON show that, on allowing fresh blood in place of that containing the chloroform to flow through the coronary vessels, the beat in a few seconds reappears and in a few seconds more regains its unimpaired activity completely. The cardiac danger, therefore, in chloroform narcosis, though grave, offers the favourable feature that mere continuance of the depression does not aggravate it, at any rate when low percentages are being dealt with. Mr. VERNON HARCOURT'S inhaler, however, though so ingenious and so highly commended by many observers, has not escaped criticism from the mechanical point of view.

An interesting paper by Professor B. MOORE and Dr. H. E.

ROAF was read to the Section of Physiology as a contribution to the debate. These observers propound the thesis that chloroform combines with proteid radicles of living matter in a compound which is readily dissociable. Finding, as others before them, that chloroform is absorbed by blood in larger measure than by water or saline solutions they have devised a method of reading directly the pressures it exerts in the two fluids. They find that the tension exerted by a given quantity of chloroform in blood is less than its tension when dissolved in water or physiological saline solution. They urge that it combines with the blood proteids. This view is in antagonism to the view of Professor OVERTON, who refers the predominance of nerve effects in chloroform action to the high solubility of the drug in fatty compounds, such as the lecithin of nerve fibres. But these fats are not the immediately active part of the nervous mechanism and it is difficult to see how on OVERTON'S views the immediateness of the action of the drug, both in regard to onset and recovery, can be explained. On the other hand, the view of the production of an easily dissociable combination between chloroform and forms of proteid agrees well with a fact taught by the work of SHERRINGTON and SOWTON. When administered in blood instead of physiological saline solution the amount of chloroform which can be given to the heart without depressing its action is increased twelve-fold. It may be that the capriciousness of action which seems at present to attach to chloroform, as to so many of the drugs of which we are compelled to make daily use, will through patient inquiry be traced to sources controllable by practical means. If so we shall certainly witness a return to wider confidence in the employment of an effective and convenient anæsthetic.

The Hospital Isolation of Scarlet Fever.

THE desirability of isolating certain forms of communicable disease has been in some degree recognised almost ever since the dawn of history, and within the last 40 years the practice has undergone such extension that some members of the medical profession are now asking whether it is not being carried too far. Great variations, of course, exist in the conditions which have to be provided for. Enteric fever and small-pox, for instance, are comparatively rare in children, while scarlet fever, measles, and whooping-cough are comparatively rare in adults. Enteric fever invariably requires prolonged confinement to bed and attentive nursing. Small-pox may be rendered so mild by previous vaccination that the eruption is limited to three or four tiny pustules and the patient does not feel himself to be unfitted to follow his ordinary employment for more than a day or two, whereas on the other hand hardly any patient can be more helpless or more in need of careful nursing than one suffering from the confluent form of the disease. The necessity of hospital accommodation for enteric fever and small-pox may therefore be regarded as unquestionable. Exceptional diseases have also sometimes to be provided for. We believe that the Metropolitan Asylums Board commenced its hospital work with the acquisition of a site at Hampstead and the erection of temporary wards in 1869 for the treatment of relapsing fever, a disease which has not been seen in this country since 1873. In London diphtheria did not attain considerable proportions till within the last 20 years and during the same period typhus fever, which was formerly prevalent, has disappeared. Measles and whooping-cough, though productive of a considerable mortality, have never been treated in hospitals on an extensive scale. It is mostly with regard to the isolation of cases of scarlet fever in special hospitals that a diversity of opinion exists among medical practitioners.

At the Congress of the Royal Institute of Public Health held at Folkestone last month a discussion on this subject was opened by Dr. C. KILLICK MILLARD, medical officer of health of Leicester, and a number of medical officers of health took part in the proceedings. This phase of sanitation has during the past eight or nine months received considerable attention. The utility of isolation hospitals was questioned in our columns some five years ago by Mr. E. D. MARRIOTT of Nottingham, but few medical men supported him in a contention which seemed to imply that isolation hospitals were valueless in the case of all infectious diseases. In 1901 Dr. MILLARD read a statistical paper before the Incorporated Society of Medical Officers of Health on "The Influence of Hospital Isolation in Scarlet Fever." On this occasion the following motion was proposed: "That as the hospital isolation of scarlet fever has now been tried for a number of years the time has arrived when a full inquiry into the subject is desirable." The meeting, however, declined to vote on the motion. The same writer read a paper six months later at a Congress of the Royal Institute of Public Health held at Folkestone and a similar motion to the above was defeated by 70 votes to 40. After this the question remained in abeyance until October, 1903, when Dr. A. MEARNS FRASER, medical officer of health of Portsmouth, chose the subject for his presidential address to the Southern Branch of the Incorporated Society of Medical Officers of Health under the title of "Is the Hospital Isolation of Scarlet Fever worth while?" Subsequently, both in our own columns and in those of other medical journals, the question has been freely debated, and after discussion at the recent Folkestone Congress the following motion was carried by 36 votes to 20: "That as the hospital isolation of scarlet fever has now been tried on a large scale for a number of years, and as some doubt exists as to whether the results obtained are commensurate with the cost, it is desirable in the public interest that a full and authoritative inquiry into the subject should be held."

So far as we can gather, the main arguments advanced by the opponents of the system are (1) that no town which isolates habitually a very large percentage of its cases of scarlet fever in hospital can show any greater diminution in the attack rate of scarlet fever than those towns which isolate very few or none of their scarlet fever cases; (2) that isolation in hospital does not prevent the spread of the disease, inasmuch as it is recognised that, in spite of the greatest care, cases discharged from isolation hospitals, to all appearance free from infection, frequently spread the disease on their return home; (3) that as regards the patient himself he has in most cases as good, if not a better, chance of making a recovery at

home as in hospital; and (4) that the type of scarlet fever at present in this country is a mild one with a very slight mortality, the mildness of type having arisen quite independently of hospital treatment. The isolation method of dealing with scarlet fever has, however, very competent and strenuous defenders who make out a good case in its favour on medical and statistical grounds. In particular the upholders of hospital treatment combat the idea that cases can be as well looked after in the average home as in a special hospital. There is in the isolation hospital a small risk of contracting other specific diseases, but this is the only point where hospital treatment seems at fault in comparison with treatment at home. The issues raised are complex, but we think that a case is made out for inquiry, and hope that that inquiry, if instituted, will be conducted without any introduction of personalities.

Annotations.

"Ne quid nimis."

THE NEW SYDENHAM SOCIETY.

THE forty-sixth annual meeting of this society was held in Oxford on Friday, July 29th. The President, Professor William Osler, presided and there was a large attendance of members. The honorary secretary read the report of the council and submitted the balance-sheet and proposed list of officers for the ensuing year. The officers were elected by ballot, Professor Osler being elected president, Mr. Henry Power treasurer, and Mr. Jonathan Hutchinson honorary secretary. The adoption of the report was carried unanimously and among matters mentioned therein was an interesting statement regarding the Clinical Atlas now in course of publication by the society. The council had suggested that the issue of the Clinical Atlas should be prolonged indefinitely and at least four fasciculi are to be published in every year. The report stated that it would be the endeavour of the editors to make each fasciculus and, as far as possible, each plate complete in itself, but it was not to be considered that any of the subjects illustrated were finally dismissed or considered complete. As regards the publication of printed volumes it was hoped that in addition to the four fasciculi a year the funds may soon afford the publication of a printed volume yearly. These volumes would be devoted to collections of the most important monographs recently published, especially selecting such as dealt with topics which had been published in the atlas. The council further stated that a considerable increase in the members' list would enable the publication of the atlas to proceed much more rapidly. Professor Osler said that he regarded with great satisfaction the proposal that the issue of the Clinical Atlas should be prolonged indefinitely, for he felt that this work would prove of the utmost value to all engaged in the practice of our profession both at home and abroad. We can cordially endorse Dr. Osler's words, for the value of the works published both by the Old and the New Sydenham Society is inestimable to members of the medical profession. We can only hope that the desire of the council for an increase of membership will be realised.

THE SOUTH AFRICAN MEDICAL CONGRESS.

THE South African Medical Congress will be held at Pietermaritzburg, Natal, in June, 1905, under the auspices of the Natal branch of the British Medical Association. The preliminary arrangements are nearly complete. A large general committee has been formed with two subcommittees—(*a*) financial and social, and (*b*) sectional. The work of the congress will be split up into the following sections: (1) Subjects of General Interest; (2) Medicine; (3) Surgery; (4) Gynæcology and Obstetrics; (5) Public Health; and (6) Special. The list of office-bearers is not yet settled but the following offices have been filled: President of the Congress: Dr. James Hyslop, D.S.O., Lieutenant-Colonel, Natal Medical Corps, superintendent of the Natal Government Asylum, Pietermaritzburg. Vice-President of the Congress: Dr. Samuel G. Campbell, Durban. Joint general secretaries: Dr. D. Campbell Watt, Pietermaritzburg; and Dr. W. Watkins-Pitchford, Government Laboratory, Pietermaritzburg. Treasurer: Dr. W. Russell Strapp, Pietermaritzburg. Secretaries of sections (all resident in Pietermaritzburg):—General subjects, Dr. A. T. Fraser; Medicine, Mr. H. N. R. Child; Surgery, Dr. W. J. Woods; Gynæcology and Obstetrics, Mr. H. S. Flook; Public Health, Dr. O. J. Currie; and Special, Dr. R. A. Buntine. Personal invitations will be issued to all medical men in British South Africa, and those who desire to read papers are asked to communicate with the sectional secretaries. The presence at the congress of medical visitors to South Africa will be highly esteemed.

IN THE MATTER OF PATENT MEDICINES.

WE have received a long letter from a correspondent who has read with disapproval our article in THE LANCET of July 9th, p. 98, which bore this title and referred to the question of protecting proprietary medicines by letters patent. Our correspondent claims to have obtained this protection for a "powder" which he advertises as "a remedy against deranged stomach, cold in the stomach (acute or chronic), diarrhœa, dysentery, cholerine, cholera, and all other diseases consisting in and caused by fermentation or putrefactive processes in the stomach and in the intestines, further, against defectibility of blood formations and morbifically altered condition of the blood (infectious diseases) such as typhus, pneumonia, consumption, &c." Our correspondent considers that "the infringement of letters patent rights by men who cannot at least prove its invalidity is a mean fraud," and that the medical man who gives a prescription identical with the patented article is "counterfeiting the patented remedy." He adds: "You don't consider, as it seems to me, that the patient himself can be very well in the position to make his own observations and reflections on his sickness and to make on his own body experiments which lead him to such a discovery, especially if the remedies of physicians did not have any result and if the patient possesses some knowledge of chemistry." We omit the details given of the composition of the particular remedy under discussion and for the sake of argument we assume that the statements which we have quoted are literally true. Even then, however, we cannot agree with our correspondent's opinions and prefer to adhere to our own. We regard the making of experiments upon their own bodies by patients as highly undesirable, whether they are made with "patent medicines" or otherwise. We consider that if medical science can discover new drugs and uses for them, or for old ones, of benefit to those suffering from disease, it is contrary to public policy and to the interests of suffering men and women that any monopoly in such drugs or their uses should exist for the pecuniary benefit of individuals. The Patent Acts do not contain anything forbidding such a monopoly but, fortunately, there are practical difficulties in the way of its creation and maintenance. The person who registers any invention in order to secure patent rights for it does so at his own risk, and the Patent Office neither knows nor cares whether his invention is a novelty such as would

be a fit subject of a patent or not. As a matter of fact a few medicinal compounds are "patented" every year, but in the majority of cases a device or title is chosen which can be registered as a trade-mark and nostrums are advertised under and become associated with it. Other persons can thus be restrained from passing off their goods by means of any imitation of the trade-mark or "make up" which has become known to buyers as distinguishing goods of a particular kind. The supposed protection of a formula so that it may not be used by a medical man in prescribing for his patients is a bogey which, as a rule, may be disregarded. If a practitioner's medical knowledge informs him that a certain combination will be of use to his patient he need not be deterred from prescribing it by the fact that another person claims an exclusive right to manufacture it. Among the practical difficulties which, we are glad to say, exist to prevent monopolies in medicinal compounds are others besides the question of the validity of the patent rights. We would ask any who claim such rights against whom they would proceed for a supposed infringement of them. Would they sue the medical man who prescribed the medicine, the druggist who compounded it, or the patient who purchased and took it? Supposing that they could prove their facts, a matter of some difficulty, what remedy would satisfy them? Would they claim damages or an injunction? Would they ask for an account of profits or for what? And lastly, what good would any of these be to them?

THE CHAIR OF PATHOLOGY IN THE UNIVERSITY OF MANCHESTER.

THE University of Manchester has taken many important steps in the arrangement and selection of its professorial staffs. The great subject of chemistry is now represented by two professors—not to speak of many lecturers—one for inorganic and the other for organic chemistry. The subject of pathology also now calls for two professors. Formerly this subject was ably taught by Professor J. Dreschfeld, now professor of medicine. In 1891 the chair was endowed by the Proter trustees and Dr. Sheridan Delépine was appointed professor. During these 13 years the subject has grown not only in importance but extent. Bacteriology has developed at an ever-increasing rate, both in its relations to medicine and public health as well as in relation to the prevention of disease. Besides carrying on the work of the pathological department proper Professor Delépine devoted much energy to the foundation and advancement of a school of public health. Now, and for some years past, there has been a separate laboratory of public health under the direction of Professor Delépine, and in October next it is hoped to open an entirely new laboratory which, at a cost of about £10,000, is being erected on a site near to where the new Royal Infirmary will be erected. It thus became evident that some rearrangement of duties should be made for the staff of the pathological department. About a year ago the council of the then Owens College appointed Professor Delépine Proter professor of comparative pathology and bacteriology. This left the chair of pathology and pathological anatomy vacant. After full deliberation the council of the University appointed Professor J. Lorrain Smith, Musgrave professor of pathology in Queen's College, Belfast, to fill the chair of pathology and pathological anatomy. Professor Lorrain Smith was appointed lecturer on pathology in Queen's College about ten years ago and professor in 1901, when the lectureship was raised to a professorship owing to its endowment by the late Sir James Musgrave. Professor Lorrain Smith is a graduate in medicine of the University of Edinburgh; and has been John Lucas Walker student in pathology in the University of Cambridge. To his pathological experience he adds a requirement of great importance—that of having acted as a resident physician in a large hospital, the Royal Infirmary of Edinburgh. Professor Lorrain Smith's original contributions to certain departments of the borderland between physiology and pathology are well known. He has worked on the effects of thyroidectomy, the oxygen-tension of blood in health and disease, the effects of air vitiated by respiration, the oxygen capacity of the blood in anæmia, and on more purely pathological questions in connexion with typhoid fever. We congratulate the University of Manchester in thus providing liberally for the prosecution of pathology in all its branches and applications.

THE WORK OF THE GOVERNMENT LABORATORY.

THE report of Dr. T. E. Thorpe, the principal chemist of the Government laboratory, upon the work of the laboratory for the year ending March 31st, 1904, shows an increased activity on the part of this important department of public administration. Originally founded to watch over the interest of the country's revenue departments the work of the Government laboratory now includes a supervision over many commodities supplied to Government departments and provides a means of control over the work of public analysts. The total number of analyses and examinations made in the laboratory in Clement's Inn-passage during the past official year was no less than 85,305. By far the greater number of analyses referred to substances coming under the surveillance of the Revenue department, while some 6000 analyses were made for the Board of Agriculture, the Local Government Board, the India Office, the War Office, and other Government departments. Lastly, 109 samples were referred to the Government laboratory by magistrates under the terms of the Sale of Food and Drugs Acts. There are some curious instances in the report of attempts to evade the payment of duty. Perhaps the most ingenious is in connexion with saccharin which ordinarily bears a very heavy duty. It appears that chemicals have been imported which were so nearly related to saccharin that very simple treatment sufficed to convert them into this compound and it was therefore decided that such substances should be liable to the saccharin duty. Many of the entries or description of goods were found to be incorrect, though in some instances the misdescription was not made apparently with a view to evade the revenue's charges. Certain goods, however, were found to be dutiable, as when ethyl chloride was described as "chinaware," collodion as "lace," spirit as "linen manufactures," and caramel as "perfumery." Imported beers are sometimes described also as extract of malt, though showing the composition and general character of ordinary beer. There has been a considerable increase in the number of samples of cider submitted for analysis for the purpose of ascertaining whether the article as imported is derived from the juice of the apple, in which case it is admitted free, or whether it contains added sugar or extraneous spirit, when it is liable to duty. It is a pity, we think, that the duty cannot be increased on brandy when it contains extraneous spirit. In the Excise department there was also a decided increase of samples examined, due to specimens of beer having been taken from publicans and to an increase in the exportation of medicinal tinctures. Some 1200 samples of beer-wort and materials used by brewers have been tested for the presence of arsenic, and it is satisfactory to learn that the great majority of the samples were found to be either quite free from arsenic or to contain only traces. In regard to so-called temperance drinks, of 852 samples obtained for analysis 269 were found to contain spirit in excess of the legal limit. Some contained 3 per

cent., others 4 per cent. and 6 per cent., while the highest contained as much as 9·10 per cent. of spirit. With the sanction of the Treasury the Commissioners have extended the benefits of the Finance Act, 1902, to the medical and science schools of teaching institutions and under special regulation most of these have now been allowed to receive pure alcohol duty free for research purposes. We believe we were amongst the first to call attention to the drawback under which those engaged in research laboured through the prohibitive price of pure alcohol. During the past year the quantity of alcohol actually issued duty free for this purpose was equivalent to 2272 proof gallons. In regard to tobacco, in 248 instances the attention of the manufacturer or dealer was called to the fact that the tobacco contained an excess of moisture and in some instances an excess of oil. Liquorice and glycerine continue to be used for adulterating tobacco. Some flavouring fluids examined were intended for use in manufacturing cigars and were reported against on the ground that it is illegal to use flavouring matter of any kind in the manufacture of cigars. We should like to see a similar restriction applied to tobacco. The analyses made for other Government departments contain some interesting reading. For instance, three samples were examined for the fisheries branch of the Board of Agriculture in connexion with a destruction of fish in a Cumberland trout stream by matter discharged into the river from a paper mill on its banks. The discharge consisted of rosin size and it was found possible to prove the presence of rosin in a scum taken from the river which was stated to be similar in character to a substance found upon the gills of the dead fish. Again, samples of cucumber and of tomatoes were tested for the presence of copper for the Royal Gardens establishment at Kew. With the object of destroying a troublesome parasitic fungus affecting these plants the effect of watering them with dilute solution of copper sulphate had been studied in the gardens and it became desirable to ascertain whether the fruit had in this way acquired any appreciable amount of the metal. Samples grown without the copper treatment were also examined and ultimately it was found that no copper had been taken up by either the cucumber or tomato as a result of the treatment which had been successful in destroying the parasitic growth. The work undertaken by public analysts in connexion with the Sale of Food and Drugs Acts is evidently satisfactorily done on the whole, since of the 104 samples referred to the Government chemists the results differed only in regard to 15 cases. Most of the referred samples consisted of milk. We note with some gratification that the Government chemists have turned their attention to the analysis of brandy in relation especially to its admixture with foreign spirit. In two samples the Government chemists' results confirmed the opinion that the samples did not consist of spirit distilled from wine. This acknowledgment of the value of analysis in differentiating genuine brandy from mixtures of foreign spirit practically decides the question in the affirmative that the sale of brandy can be dealt with under the operations of the Sale of Food and Drugs Acts.

UPPER AIR CURRENTS.

THE existence of upper air currents has been pluckily demonstrated by the Rev. John M. Bacon in a long series of balloon ascents, the results of which he communicated to the recent meeting of the British Association. These upper air currents, he shows, will glide one above another in juxtaposition without commingling and will alter their course and obtrude themselves in a most erratic and unaccountable way where they are least expected. This is a somewhat disturbing circumstance in connexion with the warning sounds given by bells placed on submerged rocks or by foghorns. If the warning sounds emitted by these appliances are dependent upon the caprice of upper air currents it is obvious that they may fail to be heard and thus many lives may be imperilled. Sounds conveyed through the upper air will be carried sometimes to abnormal distances in directions at variance with the ground current, being borne to earth over far but favoured plots of ground while they may pass unheard over districts which might be considered to be well within sound range. An illustration of this was given on the occasion of the booming of guns in the Solent when the body of the late Queen was being conveyed from Osborne to Portsmouth. The sound of the guns firing was distinctly heard at comparatively remote places like Oxford, while at intermediate and much nearer places nothing was heard. Mr. Bacon has also made some experiments with aerial bombs which will presumably account for the occasional suprisingly far travel of sound signals as well as their failure at short ranges. He also allowed a number of light bodies of varying sizes to float away into space at different heights and in different circumstances and these when carefully watched have shown the existence of minor but headlong currents, holding perfectly well-defined courses frequently at variance with that of a balloon. The whole series of investigations is obviously of the utmost importance to the shipping trade and continued research in this direction should, we think, enjoy the liberal patronage of the Admiralty and Board of Trade.

THE TESTING OF CLINICAL THERMOMETERS.

COMPRISED in the scheme of work now carried on at the National Physical Laboratory under the superintendence of Dr. Glazebrook, F.R.S., is the testing of clinical thermometers. Very considerable numbers are sent there for this purpose by makers who, it seems, exhibit a laudable desire to receive the official certificate of verification. In 1901 the tests related to 20,389 clinical thermometers, in 1902 to 22,912, and 19,393 for last year. Since the laboratory was started similar institutions have been founded in France and America, respectively, the Laboratoire d'Essais and the National Bureau of Standards. New buildings for the latter are in course of erection at Washington which are to cost £70,000, while £45,000 are to be expended on equipment, items of provision so liberal that the English establishment suffers severely by comparison. The American Bureau has recently been actively organising the testing of clinical thermometers. A large number of instruments of various types and manufacture were studied for magnitude of errors, aging effects, the nature of the component glass, and other characters. The results pointed to a lack of uniformity in the standards in use by the makers and discrepancy in temperature readings. Consequently the American manufacturers were notified of the erroneous qualities of the thermometers and invited to submit their standards for revision. To this they responded readily, while they have shown consistent interest in the endeavour of the Bureau to introduce a uniform scale of temperature. The methods of testing employed, which are likely to be of service in scientific workshops, will be published shortly. The general nature of the test is a preliminary examination for defects of construction, such as defective graduation, presence of cracks in the glass, air bubbles in the bulb, too great effort to throw back the index below 95° F., and other construction points. No certificate can be allotted where any of these defects are observed at the first stage. Subsequently, for instruments passing these preliminaries, comparison is effected at four different temperatures with the standard thermometers of the American

Bureau in order to determine the magnitude of scale corrections.

SANITARY ADMINISTRATION AT BEXHILL.

WE understand that considerable opposition is being raised at Bexhill to a recent decision of the town council, whereby the appointment of sanitary inspector of the borough will be practically abolished and his duties transferred to the borough surveyor. Considering that the town, which is on the Sussex coast and has a population of about 12,000, is a new and increasing seaside resort within easy reach of London, the wisdom of such a policy seems to be very doubtful. Local authorities are presumably well informed as to local needs, but even though it may be supposed by municipal economists that the sanitary inspector is a "burden on the rates" no health resort can afford to be apathetic in matters of public health administration. An epidemic of enteric fever would be financially an instructive experience in the circumstances. Not only are the great majority of the medical practitioners decidedly opposed to the action of the council but they have signed a petition to the Local Government Board protesting against it and a correspondence published in the *Bexhill-on-Sea Observer* shows that one of the councillors has given notice of a motion for separation of the offices. As there seems to be quite enough work to occupy a sanitary inspector the retention of the separate appointment would apparently be advisable.

PRIMARY TUBERCULOUS ENDOCARDITIS.

AT the meeting of the Société Médicale des Hôpitaux of Paris on July 15th M. Œttinger and M. Braillon communicated an important paper on a subject which has received little attention—primary tuberculous endocarditis. Endocarditis supervening in the course of tuberculosis and due to a secondary infection has been well recognised by French writers since Tessier collected 47 cases in his thesis on "Lésions de l'Endocarde chez les Tuberculeux." This form of endocarditis is usually latent and has only a pathological interest, it does not modify the evolution of the pulmonary tuberculosis, and is due to a secondary infection originating in the pulmonary cavities in which numerous microbes flourish. Nearly every pyogenic microbe has been found in the cardiac vegetations of the phthisical. On the other hand, endocarditis due to the growth in the cardiac valves of the tubercle bacillus appears to be one of the rarest complications of tuberculosis. The lesions may be vegetative or ulcerative. All the recorded cases occurred in pulmonary tuberculosis, generally in its last stage, except one in which the lungs were sound and there was tuberculosis of the spleen. Recently M. Braillon and M. Jousset have reported a unique case of primary tuberculous endocarditis in which the tubercle bacillus was found in the blood during life and in which no other visceral lesion was present.[1] The case ran a subacute course resembling that of malignant endocarditis and proved fatal in three months. In the following case tuberculous endocarditis ran a chronic course, producing a cicatricial lesion of the valves similar to the adhesions which may be left after recovery from tuberculous pleurisy. A woman, aged 23 years, was admitted to hospital on May 20th, 1903. Her father died from tuberculosis. The patient enjoyed good health until July, 1902, when she was admitted to another hospital suffering from feverish symptoms, headache, and digestive troubles. After she had been in hospital some time signs of heart disease were detected. She was discharged in October. Thereafter her health varied and menstruation was irregular and deficient in quantity. On examination the patient was pale and wasted. The apex beat of the heart was in the fifth intercostal space, slightly outside the nipple line. The cardiac dulness extended beyond the right border of the sternum. At the apex a thrill was felt. There were presystolic and systolic mitral murmurs and reduplication of the second sound at the base. The liver extended three or four fingers' breadth below the costal border. The temperature ranged between 101·3° and 102·2° F. There was cough without notable expectoration. At the bases of the lungs there were signs of pleuritic effusion and subcrepitant râles. On the left side puncture yielded only a little blood and on the right sero-fibrinous fluid which presented the cytological characters of inflammatory effusions (polynuclear cells with numerous endothelial cells). On May 25th the temperature was normal. The pulmonary signs at the bases underwent resolution but in the right supraspinous fossa the respiratory murmur was feeble and there was prolonged expiration. The patient remained in hospital until February, 1904, without the cardiac signs changing much. At times there was cardiac failure with dyspnœa, oliguria, congestion of the liver, and irregularity of the pulse. The temperature frequently exceeded 102·2°. Death from cardiac failure occurred on Feb. 10th. The necropsy showed a slightly enlarged heart, adhesions between the two layers of the pericardium, tricuspid and mitral stenosis from old thickening, and sclerosis of the valves. On the auricular side of the mitral valve were small vegetations of the size of the head of a pin. The aortic valves retained their normal suppleness but showed on their cardiac side fine vegetations. Microscopic examination of the valvular lesions showed chronic endocarditis and in places subacute endocarditis but no signs of tuberculosis. Evidently the endocarditis extended back for two years and the aortic lesions were quite recent. There were at the apex of the right lung cicatricial retraction and three small cretaceous tubercles. A fragment of the mitral valve after being broken up and artificially digested (according to the method introduced by M. Jousset) yielded a culture of the bacillus tuberculosis. It is noteworthy that the tuberculous endocarditis ran a chronic course and produced lesions not differing from ordinary valvular lesions. M. Œttinger and M. Braillon admitted that the pulmonary lesion might have been the source of infection but they still thought that the use of the term "primary endocarditis" was allowable. The fact that no evidence of tuberculosis in the valvular lesions could be found by ordinary methods of examination is also noteworthy. However, Peroud and others have shown that in certain cases of pericardial adhesions undoubtedly tuberculous nothing histologically characteristic of tuberculosis may be found at the time of examination.

[1] THE LANCET, August 22nd, 1903, p. 551.

ILLITERATES AND THE MIDWIVES ACT.

THE recently issued report of the medical officer to the Midwives Act committee of the Lancashire county council fully justifies some of the apprehensions expressed in these columns while the registration of midwives was under debate. We pointed out that under the new law, to be passed for the benefit of parturient women of the humbler classes, the wholly ignorant "Gamp" might acquire a position recognised by law and find her incompetency justified by registration under an Act of Parliament. The midwives who have already been enrolled upon the representation of the Lancashire county council number 418, and among these are 86 women who are "illiterate." The section under which they are placed upon the roll is as follows: "Any woman who within two years from the date of this Act coming into operation claims to be certified under this Act shall be so certified provided she holds a certificate in midwifery from the Royal College of Physicians of Ireland, or from the Obstetrical Society of London, or the Combe Lying-in Hospital and

Guinness's Dispensary, or the Rotunda Hospital for the Relief of the Poor Lying-in Women of Dublin, or such other certificate as may be approved by the Central Midwives Board, or produces evidence satisfactory to the Board that at the passing of this Act she has been for at least one year in *bonâ-fide* practice as a midwife and that she bears a good character." The phrase "*bonâ-fide* practice as a midwife" is a vague one such as is sometimes introduced into an Act of Parliament and left to be interpreted by those to whom the administration of the Act is confided. It is, however, at least arguable that the women intended are those to some extent *ejusdem generis* with those whose mode of education is specified. If this be admitted it becomes illogical as well as troublesome to frame regulations for midwives and at the same time to enrol women quite incapable of carrying them out. The rules of the Central Midwives Board may, no doubt, be imparted orally to the illiterate but they cannot be obeyed by women unable to write, for they require written reports to be made. Nor are the rules otherwise capable of being understood and carried out by those so stupid and ignorant as not to be able to read in the twentieth century. Compulsory education has now existed for some time, but reading and writing have been for a much longer period within the reach of all endowed with a reasonable amount of intelligence and ambition.

THE VALUE OF EXPLORATION IN SUSPECTED MALIGNANT DISEASE OF THE OVARY.

IT must have happened to all surgeons to meet with cases from time to time where the question as to whether they were justified in recommending operation in what appeared to be instances of undoubted malignant disease has been a very difficult one to determine. It is always a difficult matter to decide to give a patient no chance at all and to condemn to death the subject of an obscure abdominal tumour with the opinion that no operation is justifiable or should be attempted. The question of diagnosis in such cases is so difficult a one and mistakes are so frequently made that the surgeon is always loth to give up all hope and to do nothing. On the other hand, cases of undoubted malignant disease of the ovary, for example, or of the other abdominal organs are often so little benefited by operation and the consequent disappointment to the patient is so severe that the surgeon is disinclined to undertake what he feels cannot but be a hopeless task. In the Ingleby lectures delivered this year Dr. C. J. Cullingworth discusses this very important question and from his large experience of such cases relates some very striking examples of what can be done by modern surgery. His examples are mainly ones of malignant disease of the ovary, a class of tumour of which our knowledge is still far from perfect, and a class of growths therefore in which the exact diagnosis of malignancy must always be a matter of considerable doubt. He brings forward a very strong plea for exploration in such cases and relates some most instructive cases where such growths have been removed with complete success not only immediate but also remote. As he justly points out, what are the criteria, for instance, by which we can say for certain that a papilloma of the ovary is a benign or a malignant tumour? In his opinion at the present time we have no absolute criteria, either clinical or microscopical, by which we can recognise the character of such a growth with certainty. It is often only by the subsequent history of the case that the question can really be decided. Even if the pathologist says, as he often does say, that any given tumour is malignant, shall we not if possible remove it in the hope that it may not recur? Undoubtedly, yes; and more especially in the case of many of the more obscure forms of pelvic tumours in which certainty as to their exact nature sometimes cannot be obtained even after they are removed from the body. When the abdomen has been opened and an apparently malignant tumour has been exposed we should try to remove it, at any rate in those cases where it appears possible to do so, in the hope that we may be successful. Even if we do not cure the patient we may prolong life, as several of Dr. Cullingworth's cases show, by many years. And the wisdom of this procedure is seen best of all in the case of ovarian tumours where the border-line between the benign and malignant growths is so ill-defined and obscure.

THE BUYING AND SELLING OF MEDICAL PRACTICES.

AT the recent Lincolnshire assizes, before Mr. Justice Bray, Mr. Douglas Wardleworth recovered a sum of £125 damages for misrepresentation on the sale of a medical practice from Mr. Thomas Cornelius Lawson. The misrepresentations alleged referred to the income derivable from the practice, to the nature of the fees to be expected, to the absence of competition, and to the price paid for the practice, but a feature in the case, which otherwise was not of a nature to call for comment, lay in the fact that Mr. Lawson, who became qualified to practise in 1872, had bought and sold no less than 29 or 30 practices in his professional life! This is a legitimate method of livelihood, no doubt, but at the same time the fact that the vendor is in the habit of so dealing is one which the purchaser would be wise to take into account, if he were aware of it, and a person so selling cannot complain if his representations are scrutinised somewhat unfavourably should any dispute arise with regard to them. Careful inquiry before completing the purchase of a practice will save both parties much anxiety and possible differences afterwards. The intending incomer has a right to the fullest possible information, and, besides inspecting all accounts carefully, he can in most cases make inquiries unobtrusively which will enable him to corroborate or disprove for himself statements as to the class of patients to be expected and as to the presence or absence of competition, with regard to which the vendor may be inclined to take too sanguine a view.

THE RANGOON LYING-IN HOSPITAL.

WE are very glad to see from copies of the *Rangoon Gazette* which have been forwarded to us by Dr. T. F. Pedley that the unfortunate differences which have been crippling the work of the Rangoon Lying-in Hospital have been satisfactorily settled through the good services of Sir Hugh Barnes, Lieutenant-Governor of Burmah. In THE LANCET of Oct. 17th, 1903, p. 1106, we published a short annotation dealing with the unfortunate quarrel which had taken place over the management of this institution. There is no necessity now to recall all the details of the dispute, suffice it to say that owing to the differences of opinion between the official elements and the civil the support given to the hospital had very markedly fallen off and its utility had been much crippled thereby. Moreover, its proper function as a lying-in hospital and a training school for midwives had been abrogated and its usefulness much impaired. Happily, now all the points at issue have been satisfactorily settled, the institution has been restored to its original purpose and the honorary civil medical staff, who had been dismissed by the orders of the late lieutenant-governor, have been reinstated in their positions. A share, too, in the management of the hospital has been restored to the public who, in the first instance, supplied at least half the funds for the rebuilding. There is a very large demand in Burmah for properly trained

midwives and in this institution native women are given a complete training and are then able to do something to mitigate the sufferings of their own country-women. The system of dealing with confinement cases prevalent amongst the Burmese and neighbouring people is of the most cruel description and entails an enormous mortality amongst the mothers and children. It will be possible in the new hospital to train annually a considerable number of women and they will be of the greatest assistance as nurses amongst the natives who, unlike many of the Indian races, have none of the caste prejudices and social restrictions which prevent their women from receiving treatment at the hands of physicians of the male sex. Now that all sources of trouble have been removed we have no doubt that the public will come loyally to the support of a most deserving institution and by liberally subscribing to its funds will enable it to carry out the work which it is intended to perform.

THE TREATMENT OF APPENDICITIS.

AT the last meeting of the Zürich Society of Medical Practitioners Dr. Theodore Zangger spoke on the subject of the primary treatment of appendicitis. He said that he had always believed it injudicious to let the contents of the colon stagnate, as this hindered the proper drainage of the appendix and offered the most favourable condition for the increase of virulent organisms such as bacterium coli. He advocated the use of small enemata, from half a pint to a pint in bulk and at a temperature between 60° and 70° F., repeated once or twice at the onset and afterwards every two days. Narcotics should be used as little as possible and they could often be dispensed with altogether, especially as the abdominal pain could be greatly relieved by the application of cotton-wool saturated with alcohol of 96 per cent. strength covered with gutta-percha paper and renewed every eight or 12 hours.[1] Of course, cases which began acutely must be referred to a surgeon as soon as possible. Dr. Zangger also quoted the good results which Professor Bourget of Lausanne has obtained by treatment on the same principles.

THE LOCALISATION OF ALKALOIDS IN PLANTS.

AN interesting paper was communicated to the meeting of the British Association of Science at Cambridge by Professor L. Errera of Brussels which dealt with the micro-chemical methods by which alkaloids may be located in plants. According to the results it would appear that the qualitative and, to some extent, the quantitative distribution of alkaloids (and especially those belonging to the pyridic series) can be determined micro-chemically in the various organs of the plant with certainty. In living cells the alkaloids are eliminated from the protoplasm and gather in the vacuole, and it is only in cells which have lost all their liquid contents (as in ripe seeds) or in dead cells that they accumulate in the protoplasm or the cell wall. The alkaloids are generally found to be localised. In very active tissues they occur chiefly in the neighbourhood of growing points and in the ovules. In the epidermis the alkaloids are commonly found in the epidermic hairs, and often also in the sub-epidermic layers of vegetative organs as well as in the outer layers of fruits and seeds. In certain of their phloëm elements and in the neighbourhood of the pericycle alkaloids occur encircling the fibro-vascular bundles. They are found also in the phallogen and the youngest cork cells and in laticiferous or similar elements when present. The micro-chemical method has brought to light many more alkaloid-bearing plants, and it is suggested that the application of the method to animal tissue would reveal the existence of organic bases. According to Professor Errera, the results of study seem to show that alkaloids are waste products resulting from the katabolism of cytoplasm and secondarily employed for defence against attack by animals. A few grains of alkaloid constitute a protection not less efficient, he remarks, than the strongest spines.

[1] THE LANCET, Jan. 28th, 1899, p. 222.

MUSSEL POISONING.

IN another column we publish the report of two cases of poisoning by mussels, one of which proved fatal. Dr. R. Rolfe, medical officer to the New Dock Hospital, Avonmouth, gives an interesting account of the symptoms which were observed and draws attention to the principal features of the cases, the tendency to syncope being one of the most remarkable. It has generally been believed that mussels owe their poisonous properties to incipient putrefaction taking place after the harmless fish were removed from the water or to the presence in them of copper derived from ships' bottoms. Brieger,[1] however, isolated from the poisonous mussels a basic product which he named mytilotoxin. This toxin is apparently formed whilst the fish is still alive and the conditions which lead to its development are water which is contaminated with sewage or other decomposing organic matter or water which is not in free communication with the sea. Dr. Rolfe states that the water from which the mussels were obtained at Avonmouth was known to be polluted by sewage but, nevertheless, the inhabitants of the place often ate shell-fish gathered from this situation. In this instance an attempt had been made to purify the shell-fish by carefully washing them and cooking them thoroughly in several changes of water. The fact that these precautions failed to destroy the toxin is an interesting one and demonstrates the necessity of the greatest care in assuring the purity of the water in the neighbourhood of mussel beds. It has been also shown that if mussels which have thus become poisonous are placed in water in free communication with the sea they rapidly lose their poisonous properties. In some districts mussels can only be obtained at low water; they are then stocked in a pool higher up on the beach. This method would probably tend to favour the production of the toxins, as the shell-fish would be removed from the free and constant contact with fresh sea water; such a practice, therefore, should be forbidden.

[1] Ueber Ptomaine, Dritter Theil, 1886.

CERTIFICATES OF SUCCESSFUL VACCINATION IN SCOTLAND.

THE Local Government Board for Scotland in considering the reports made to it by medical officers of health regarding cases of small-pox has had its attention drawn to cases of children (the majority of whom were under five years of age) who presented no evidence whatever of successful vaccination either in the presence of local scars or in modification of the disease, although said by the parents to have been vaccinated. Similar cases have been observed in the course of the inspection of contacts. Further inquiry by the Board has led to the discovery that in many such cases a certificate of successful vaccination had been lodged with the registrar. After investigation of the circumstances under which this occurred the Board has issued an important memorandum in which it states that it "is satisfied that considerable laxity exists in the granting by medical practitioners of such certificates, in respect that they are not always founded on personal inspection of the child after a sufficient interval and occasionally have even been signed at the time of the operation, when its result was unknown and when subsequent inspection would have disclosed failure." A

practitioner who grants a certificate of successful vaccination in such circumstances places himself in a very serious position. The certificate is to the effect that the operation was performed by the person who signs it and that it has succeeded, and the Board rightly points out that if in either respect the certificate is false the signatory is liable to a criminal prosecution. There have already, we are sorry to say, been successful prosecutions in these circumstances, both in England and Scotland, and undoubtedly the medical men in question must be regarded as having committed a serious violation of public duty, properly involving serious punishment. The Board therefore has done right to make it publicly known that if in future any case of this nature comes to its knowledge it will be reported to the Crown with a view to proceedings being taken.

THE TAMWORTH TOWN COUNCIL AND THE REPORT OF ITS MEDICAL OFFICER OF HEALTH.

WE recently pointed out[1] that the town council of Tamworth (Staffordshire) was greatly at fault in certain notions which it held with respect to the reports of the medical officer of health. It appears that "scenes" in the council chamber were attributed to "the action of the medical officer of health in sending his annual report to the Local Government Board and the county council without first intimating to this council his intention to do so." Unfortunately, the council did not at the same time produce any evidence to the effect that it was entitled to have the first inspection of the document in question, and, distressing as it may appear to parochially constituted minds, Dr. H. J. Fausset, the medical officer of health, complied with the statute, even at the risk of ruffling the sensibilities of the council. These worthy gentlemen probably now recognise that even their authority has its limitations and have avenged themselves by refusing to pay the bill of £3 18*s.* for printing the report. We are glad to see that the *Tamworth Herald* of August 13th contains a letter of protest against this petty and, no doubt, futile attempt at coercion, the writer being Mr. A. M. Sculthorpe, a medical practitioner of many years' standing, who has been four times mayor of the town. The real cause of the trouble is in all probability the inveterate tendency of some local authorities to consider that the medical officers in their service are dependents requiring to be kept in tutelage by a chairman or clerk to the board. Conflicts of this kind are not rare in the annals of local government. In 1897, before the creation of the metropolitan boroughs, the vestry of St. George's, Southwark, imagined that it could deal with the reports of its medical officer of health as the town council of Tamworth seeks to do. The incidents of the controversy, including an appeal to the Local Government Board, were described in THE LANCET at the time[2] and we recommend perusal of the story to the town council of Tamworth.

THE medical officer of health of the Cape Colony states that for the week ending July 30th the condition of plague in the Colony was as follows. At Port Elizabeth 2 fresh cases were discovered—namely, a coloured male on July 24th and another on July 28th. Of 90 rats and 234 mice captured or found dead and bacteriologically examined 16 rats and 4 mice were plague-infected. In the Cape Town and Harbour Board area 520 rodents were examined but none was infected with plague. As regards the Mauritius, a telegram from the Acting Governor received at the Colonial Office on August 19th states that for the week ending August 18th there were 5 cases of plague and 3 deaths from the disease. As regards Hong-Kong a telegram from the Governor received at the Colonial Office on August 22nd states that for the week ending August 20th there were 1 case of plague and 1 death from the disease.

[1] THE LANCET, June 18th, p. 1739.
[2] THE LANCET, July 31st (p. 283) and Sept. 18th (p. 733), 1897.

IT has been brought to our attention that in our obituary notice of the late Sir John Simon we omitted from the list of that great sanitarian's colleagues the name of John Netten Radcliffe. Radcliffe, who was assistant medical officer to the Local Government Board from 1871 until 1883, was one of Simon's most trusted friends and coadjutors. His death in 1884 at the comparatively early age of 58 years deprived sanitary science and epidemiology of one of their finest exponents and also lost to this newspaper a valued friend and contributor.

THE assistant of the Governor of Odessa, Privy Councillor Stark, M.D., died on August 13th, aged 67 years, from paralysis of the heart. To him were due, says the *Novoe Vremya*, the successful measures which have protected Odessa and district from Asiatic epidemics.

Looking Back.

FROM

THE LANCET, *SATURDAY*, AUGUST 26, 1826.

Much difference of opinion exists, as to the *contagiousness* of *phthisis*. This very difference of opinion shews that, at all events, it must be of rare occurrence. The exceptions indeed are so numerous, as to render it the most probable opinion that the disease is not contagious; and this, I confess, is mine.

Causes. This disease consisting in inflammation of the lungs, it may be brought on by all the causes of inflammation, though it often arises imperceptibly, or without being noticed. Exposure to cold, injuries of the lungs, irritating matters inhaled in breathing, are among the most frequent. It follows also various other diseases, which may be considered to act as *exciting causes;* such are, common inflammation in the lungs, not wholly subdued; neglected catarrh; ulceration, or other cause of irritation about the larynx; any other disease attended with continued *pyrexia* or febrile action, this state appearing to give a disposition to slow inflammation in the lungs, that at length ends in change of structure.

Much depends upon *predisposition*, which appears to be induced by a variety of circumstances. *Phthisis* is very frequent in cold and variable climates, while it is comparatively rare in hot ones. It is more frequent between the ages of 15 and 35, than either before or after. The *predisposition* is evidently hereditary in many families, and is affected by corporeal figure; the tall and thin, and narrow-chested, and the deformed, being the most disposed. A great number of *phthisical* subjects exhibit marks of *scrofula* in their habit, or have done so at a former period. Hence *scrofula* is considered as a *predisposing* cause: though we do not know how this acts, unless by being attended with a general disposition to inflammation, and that of an indolent kind. This, in fact, is all we know of scrofula itself.[1]

[1] Excerpt from Lectures on the Theory and Practice of Physic, delivered by Dr. Clutterbuck in the Theatre, General Dispensary, Aldersgate-street. Lecture XXXVIII. "*On Phthisis Pulmonalis, called also Pulmonary Consumption; and, vulgarly, Decline.*)"

DEATH OF A CENTENARIAN.—The death has recently occurred, near Taunton, of Mrs. Elizabeth Jenkins, who celebrated her 105th birthday on Jan. 1st last. The deceased, who was born in Somerset, had been the recipient of bounties from Queen Victoria and the present Queen on account of her great age and also owing to the fact that at one time she had six sons serving in the army. The local newspapers state that her age has been verified by reference to the parish register.

SOUTH AFRICAN HORSE SICKNESS:
A NOVEL METHOD OF TREATMENT BY OXYGEN INHALATIONS.

BY H. KENNEDY SMYTH, M.B., B.CH. R.U.I.,
DISTRICT SURGEON, GWELO, RHODESIA.

THIS deadly scourge of the equine race has become all too familiar to residents in Rhodesia and other parts of South Africa. Nearly every man who keeps horses or mules in this country must have experienced the feeling of helpless despair at seeing valuable animals die without being able to do anything to save them. Having suffered myself in this way I tried to think of some remedy that might offer a chance of success. About three years ago it occurred to me that oxygen might prove effective. I had never heard of its use in any disease of the horse but the rapid, distressed breathing characteristic of this disease and the picture of death by suffocation led me to decide on an original experiment. In the first place the question of apparatus had to be solved, which I was able to do by the kindness of Messrs. Down Bros. of London, who designed and made an inhaler according to my written directions. Through various delays I did not get it till the sickly season of 1902 was over, while in the following year there was comparatively little horse sickness at Gwelo, so that no opportunity offered of putting my method into practice until a few months ago, when the disease became very prevalent.

As is well known the two principal forms are "dikkop" (Dutch for thick head) and "dunkop" (or thin head). The latter is the more rapid and fatal kind, in which signs of intense respiratory embarrassment develop, causing death in a few hours. This was the sickness which affected a mule the owner of which asked me to see it at 6 P.M. on March 7th, 1904. The symptoms were severe and typical—rapid breathing (over 40 per minute), with heaving of the flanks, cough, discharge from the nostrils, and high temperature (103° F.). Treatment by the inhaler was begun at once. It was used four times up to midnight with evident relief. A 30-gallon cylinder was emptied on each occasion and a smaller quantity was given on the next day about 4 P.M. when the breathing seemed to require it. The animal gradually recovered afterwards.

The next experiment was made on a horse of my own with "dikkop-ziekte." I made the following notes. "It was taken ill on Monday, April 18th; temperature 102° F. in the morning; little else noticeable except slightly increased respiration. Tuesday, temperature 104°; inhaler was used for the first time; swelling over the eyes. Wednesday, about the same. Thursday, it had a very bad day; respiration between 30 and 40 per minute; temperature 103·6°; much difficulty in moving. Friday and Saturday it seemed rather better. Getting on all right during Sunday till the evening, when being left alone it lay down. On getting to its feet temperature was 105°. The next evening, Monday, 25th, was its worst time; temperature 105·2°, rattling in the trachea, expecting it to die, but persevered with inhalations which certainly put new life into it. Injections of strychnine (one grain) at critical time also appeared of service. Froth and serous discharge (blood-stained) came from the nostrils and the temperature gradually declined during the second week, until Saturday, April 30th, when it rose to 106°, due to formation of an abscess where the hypodermic injection had been given. This was opened; swelling over the eyes and in other parts went away by degrees. Nearly five 30-gallon bottles of gas were used for inhaling."

The above are the only two cases that I have to relate so far. The supply of oxygen which was procurable from Cape Town became exhausted and though people begged of me afterwards to treat their horses it was impossible. I need not go into the ordinary mortality of this disease, which is enormous, but feel convinced by observation of these two animals before and after the use of oxygen that this treatment is capable of affording great relief to the symptoms. It will not cut short the infection but promises to aid most materially in prolonging life till the disease has run its course. The deficient oxygenation of the blood is readily shown by the livid hue of the membranes of the eye and mouth which became much more normal after each inhalation. Whether the method of protective inoculation devised by other experimenters will confer lasting immunity remains to be proved but there can be no doubt that a horse which has contracted the disease in the ordinary way and got over it is "salted." In conclusion, I shall only add that a sick animal requires attention night and day, while the carrying out of this treatment properly cannot be lightly undertaken.

Gwelo, Rhodesia.

THE ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR 1903.

FIRST NOTICE.

Dr. B. Arthur Whitelegge, chief inspector of factories, has issued his annual report and it contains, as usual, much interesting matter. It opens with a brief introductory report by Dr. Whitelegge himself, which is followed by the reports of the superintending inspectors of the various divisions of the United Kingdom, of the superintending inspector for dangerous trades and machinery, of the principal lady inspector, of the inspector of textile fabrics, of the inspector of humid textile factories, of the electrical inspector, and of the medical inspector. There is a special report made by the principal lady inspector and the medical inspector dealing with the International Congress of Hygiene and Demography held at Brussels in September, 1903. The various reports are supplemented by appendices and are followed by the statutory orders and certificates concerning factories and workshops issued by the Home Secretary in 1903 and by reports of decisions of the Divisional Court upon cases stated by magistrates relating to prosecutions under the Factory and Workshops Act. We wish that we could add that the volume concludes with an excellent index, but there is none at all. We have frequently called attention to this omission and pointed out that a Blue-book such as this should contain bound up with its contents an ample index to them. Such works are essentially books of reference and, however interesting the whole of their matter may be, those who have studied them once do not want to re-read them or to hunt through them every time that they desire to refer to a particular passage. Others who are interested in a special subject only may not desire or may not have time to peruse the whole work and may simply desire to be guided to the points which concern them. The "Table of Contents" preceding the main body of the reports is also extremely meagre, but the principal lady inspector prefaces her own report with a table of its subject matter which is of some assistance to the reader of that portion of the work.

The magnitude of the task performed by the factory department of the Home Office and its importance to the welfare of the manufacturing community and their workers are perhaps inadequately recognised by the public. It may be to some extent gathered from the fact that at the close of 1903 there were 102,939 factories and 144,148 workshops upon the registers, these totals including laundries but not men's workshops, domestic workshops or factories, docks, or warehouses. From a table relating to 1901 it is seen that in textile factories alone in the United Kingdom 1,029,353 men, women, and children were employed and in laundries 91,086. Among the 317,933 statutory reports made by occupiers of factories and workshops in 1903, 92,600 related to accidents, 1047 of which were fatal. To the medical profession the efficient carrying out of the Factory and Workshops Act is of considerable interest, relating as it does principally to matters affecting the health of the community, and nearly 2000 members of the medical profession (there were 1976 certifying surgeons in 1903) supervise the health of the young persons and children employed and examine the nature and cause of deaths and injuries resulting from accidents. During last year 161 certifying surgeons were appointed to fill vacancies, having assigned to them, according to recent practice, definite areas following as far as possible well-known local boundaries, such as those of local authorities or wards.

Among the matters dealt with by the Home Office in its supervision of factories few are of more general importance

and interest than those relating to air space and ventilation. In an Order of 1903 500 cubic feet are prescribed for each person, no height above 14 feet from the ground being taken into account, where certain operations connected with lead (casting, pasting, and lead burning) are carried on in the manufacture of electric accumulators, and 500 cubic feet is also the amount now fixed for the first time as the air space for each person in underground bakehouses. In bakehouses not underground, where work is carried on at night by artificial light other than electric light, there is to be during the night time 400 cubic feet of space for each person. Both these amounts relating to bakehouses are in substitution for a minimum space of 250 cubic feet formerly permitted, so that the change in so widely practised an industry as baking is one of considerable importance. The new regulations relating to the lead manufactures referred to are in substitution for those made under a certificate that the manufacture of electric accumulators was a dangerous trade and comprise rules as to the other matters which have to be provided for in a lead industry. They came into force on Jan. 1st, 1904.

The question of ventilation is one of importance in all industries, as well as in those in which the nature of the work calls special attention to it. It involves more than the provision of air space and requires more than the goodwill of manufacturers for its solution, and it is one in which the workers themselves are not always on the side of innovation and improvement. The necessity for fresh air is not patent to every intelligence and the cruder method of opening windows and so putting workers in a draught, which is the only means of ventilating familiar to many minds, is reasonably unpopular with persons carrying on sedentary occupations, either in a very high temperature or in unwarmed rooms, in cold weather. With regard to the question of warmth occupiers are instructed to aim at a temperature not below 60° F. and factory inspectors have been recently reminded that a reasonable temperature is to be maintained in factories and workshops, "but the measures so taken must not interfere with the purity of the air of any room in which any person is employed."

A few quotations from the reports of some of the lady inspectors will best illustrate the ventilation difficulty. Miss Paterson refers to the bad conditions prevailing in small dressmaking and tailoring workshops and goes on to speak of a large tobacco factory in which things were no better. She says: "The various processes were carried on in flats round a central well which ran from the ground floor to the top of the building and was devoid of any maintained ventilation. It was quite striking how the impurity of the air increased as one ascended and the accumulated foulness at the top had its comment in the pale faces of the workers there." Miss Sadler reports at length upon the tailoring shops in Cornwall and mentions insufficient means of ventilation as their chief defect. She says: "Most of my visits were paid in April, when the weather was still far from warm, and this lack of ventilation was therefore more noticeable than at a later season. I can honestly record, however, that visits amongst the tailoring slums of Soho and the East-end of London have failed to leave one with such a bad impression. ..... I found in nearly every case the men and women herded together in the workrooms, the men sitting tailor fashion on the floor and the women near them. Of ventilation there was none, unless the small amount of fresh air which might filter through the chinks of the doors or the badly fashioned windows might be dignified with the title of such. ..... Long talks with the employers gave little result. The invariable answer was that the women and men never complained. As a matter of fact, the men often complained to me in private: the women did not, but their pale, anæmic looks were more truthful than pages of spoken or written complaints. Numerous notices to, and correspondence with, the local authorities concerned has perhaps done some good, but it was difficult to impress upon them the fact that the provision of one or two windows cannot be considered sufficient means of ventilation, taking into consideration the fact that those windows have to be closed in cold weather on account of the draught." A London inspector, Miss Vines, writes of the absence of all ventilation in basement workrooms and of one of these where the foreman kept a bottle of lavender salts and burned brown paper to aid in the recovery of the girl workers who were constantly fainting. Adequate ventilation is not likely to be an improvement in the conditions of factory life until the workpeople themselves demand it after having been sufficiently educated in domestic hygiene to desire it in their own homes. Reports, however, speak of increasing intelligence in this as in other matters, particularly where gas stoves and similar methods adopted for raising the temperature at the same time vitiate the air; of these the workpeople complain readily. Reference is made by the lady inspectors and elsewhere in the report to the improvements being gradually introduced in the matter of separate and sanitary closet accommodation for the two sexes. This is regulated by an Order which came into force in July, 1903, and where it is not in force instances of unsuitable or insufficient accommodation can be referred to the district council. A state of affairs therefore which in many factories and workshops in town and country alike has been disgusting, indecent, and prejudicial to health is becoming better, the amelioration being welcomed by workers of both sexes. With reference to the attitude of local authorities in sanitary matters the inspectors of the various districts in England give satisfactory accounts of the assistance and coöperation supplied by them and in Scotland and Ireland there appears to be improvement. As to sanitation generally as well as in the provision of sanitary conveniences where large numbers of persons of both sexes are employed, industries of a temporary nature, such as fish-curing, where there is pressure of work at certain seasons and where permanent buildings are not used, seem to present the greatest difficulties. The curing houses at Hull, where the industry is largely practised, appear to be well looked after by the city council and to leave little or nothing to be desired. Great Yarmouth has been very bad in this connexion but seems to be improving.

Writing of South Wales an inspector, Mr. Wolfe, says: "Outside the two county boroughs and, say, two other districts, sanitation (in factories) appears to me to be as much a matter of chance as anything else." Of North Wales Mr. Hilditch says: "Much has been done during the year in the matter of sanitary accommodation at factories and the conveniences are approaching something like the prescribed standard. Still there remain a considerable number of places much below it."

Mr. Vaughan reports of North London a continued tendency to move factories to the suburbs where rents and rates are lower and the district generally is less congested. Reference is made to this movement in other reports, Mr. Hoare stating that in East London decentralisation has almost ceased. It is an interesting development where it makes progress, but a note supplied by one of the lady inspectors, Miss Vines, causes a little doubt whether it will obtain enthusiastic support from all classes of workers. Having spoken of the tendency to remove from central London to the suburbs she continues: "With reference to this matter it is curious to note how frequently London born girls are quite unable to accustom themselves to the absence of the rush and whirl of city life. Some time since a large factory was removed to an outer suburb of North London and those of the employés who lived in the city vacated their city homes and came, as the management hoped would be the case, to live in the neighbourhood of the factory. On inspecting the factory this year, however, I was informed that those women and girls who had with the factory removed from the city had been unable to stand the comparative quietness of the district. It was too dull, they said. They had therefore returned to central London to live and came out by train every day to work in the factory." In other words, it is among the women and girls who especially should be benefited by removal into healthier surroundings that least gratitude for the improvement of their lot is likely to be found. They will be ready to put up with the overcrowding and all the other evils which go to make the "housing problem" urgent rather than to give up the cheap music hall and other excitements of city life. With them the "garden city" is by no means likely to find favour.

THE WAR AND THE SUPPLY OF MEDICAL MEN FOR CIVILIANS.—Every day, says the *Novoe Vremya*, the war is thinning the ranks of the St. Petersburg medical men and thus the remaining contingent of town medical men is overloaded with work. Measures are being taken for recruiting a temporary staff to continue on duty during the absence of the city medical practitioners.

ANNUAL REPORT (FOR 1902) OF THE REGISTRAR-GENERAL.

THE close of a Parliamentary session is usually the signal for the issue of a batch of overdue departmental reports in order, we presume, to insure their delivery to Members before the prorogation. Among the Blue-books presented to both Houses on Monday, August 15th, is the Registrar-General's report on the vital statistics of England and Wales for the year 1902.

In reviewing Mr. W. C. Dunbar's first contribution to what we described as virtually a new series of the reports for which he as Registrar-General is responsible, we ventured, on behalf of our profession, to augur a favourable reception for the improvements as regards arrangement which at the dawn of a new century had been introduced in the national records of birth and mortality. A careful examination of the report now before us considerably strengthens the impression left on our minds by the perusal of its predecessor. On reading that portion of the preface to the present volume which bears his signature we notice that the Registrar-General has continued to devote to the details of registration a degree of personal interest which, in recent years at any rate, has not invariably been apparent. Whether it be that nowadays social questions involving considerations of public health have come to absorb more profoundly than of yore the attention of State departments we know not, but there is a passage in the recently issued report of the Committee on Physical Degeneration which indicates that even in their present form the statistical reports of the Registrar-General are appreciated, whilst it conveys the further impression that if the information which they contain were supplemented in the manner and to the extent desired by the committee their value for State purposes would be vastly increased. But the time has at length arrived when the vital history of thirty-three millions of Englishmen, the circumstances attending the life and death of half a million annually of our fellow men, has become a question not of medical interest only but of grave national concern.

We observe that these annual reports are formally addressed to Mr. Walter H. Long who is the Minister accountable to Parliament for the conduct of that office and who also controls the operations of the Poor-law department of the Local Government Board. We further note that in its recent report to Parliament the committee just referred to appeals to the President of that Board to establish and to maintain from henceforth a State register of pauper sickness, the absence of which, as a means of estimating the health of that stratum of the community which is most prone to physical deterioration, the committee greatly deplores. "Of great value," says the committee, "are the Registrar-General's statistics concerning the mortality of the whole population without distinction of social status; but for the reason that no particulars are given on the latter point these statistics are of little value in the present connexion. And yet, as regards sickness that is not necessarily fatal, it appears that for years past there has practically run to waste in this country an enormous mass of information which, had it been arranged and analysed on suitable lines, would have been simply invaluable to the committee at the present juncture. ..... The committee therefore strongly recommends that the assistance of the Local Government Board should be forthwith obtained, with a view of setting on foot and maintaining from year to year a register of sickness (not confined to infectious disease) treated by the Poor-law medical service." The committee further thinks that the tabulation and analysis of such sickness might advantageously be intrusted to the General Register Office which possesses a trained staff and other machinery appropriate for the work. Some years ago an attempt was made to establish a local sickness register in Manchester, largely on the initiative of Dr. Arthur Ransome, then of that city. The undertaking was successful for the time, but being a voluntary one the clerical labour involved soon became too heavy for private resources and, unfortunately, the project was ultimately abandoned, merely from lack of funds. But the Privy Council Committee's present suggestion involves the creation of a State organisation complementary to the anthropometrical survey, the establishment of which it also recommends. And in these circumstances we are convinced that great advantage would result from such a measure which would, we think, receive the support of our profession and we further cordially join with the committee in advocating its initiation at an early date. In that event it is to be hoped that the Registrar-General will see his way to include in his report an annual record of sickness as the natural adjunct to his present record of mortality.

Turning to that part of the report which traces the movement of the national birth-rate, we find that although the rate of births has not further fallen since 1901, it still remains at 28·5 per 1000 of the population, which is the lowest rate on record and is considerably below the decennial average. Turning to the marriage-rate, we notice what at first sight promises to be a set-off to the declining birth-rate. The time-honoured mode of stating the rate of marriage is in terms of persons living *at all ages*, and thus computed the marriage-rate in the three periods ending with 1882, 1892, and 1902 were 15·2, 15·5, and 15·9 per 1000 respectively, showing a *progressive increase* in the marriage-rates as ordinarily calculated. But since a large majority of the population are either already married or are below the earliest marriageable ages, it is obvious that the population at all ages is not a satisfactory standard by which to calculate an increase in the rate of marriage. If the rates be calculated on the unmarried and widowed part of the population *at ages above 15 years* the apparent increase here noted will be turned into a decrease; for the rates in the same periods on this basis are 51·5, 49·8, and 48·7 per 1000. Careful investigation of the facts accordingly shows that although the marriage-rate has increased in proportion to the whole population it has decreased in proportion to that section thereof amongst whom marriages take place.

The most satisfactory part of the report is that which affirms for the whole country a still further decline in the mortality which, happily, has for several successive years been steadily decreasing. Thus we find that the death-rate of England and Wales in the year 1902 did not exceed 16·2 per 1000 of the population at all ages—a rate which was lower than that of any other European State, with the exception of Denmark, Norway, and Sweden. Never since the year 1837, when civil registration was established, has the death-rate been so low as this, the nearest approach thereto having been in 1894 when the rate was 16·6. The greatest saving of lives occurred among children under five years old, at which age the 1902 rates were the lowest hitherto experienced in England both among boys and girls. Reference to the tables and the accompanying remarks, in which are set forth the facts and causes of mortality among the young, indicates that there still prevails in the town districts of England a disproportionate waste of child life. Even in the favourable year under review there was at this critical age an excess of more than 40 per cent. in the town rate of mortality as compared with the country. The tables show that this difference is not due to any one disease or group of diseases in particular, but that the child mortality in towns is above that in the country from every one of the nine tabulated causes. Passing on to consider the causes of death at other ages, the report tells us that from most of the prevalent diseases there has been less than the normal loss of life in 1902. Tuberculosis, for example, which is responsible for nearly 11 per cent. of the mortality from all causes, was fatal in 7356 fewer instances than the average. Among tuberculous diseases pulmonary phthisis is the most destructive, but the death-rate from this disease among males was below the average by 84 per 1,000,000 and among females by not less than 96 per 1,000,000 of the respective populations. There has been in 1902 a considerable decrease in the fatality of tuberculous affections of the brain and its membranes, the mortality from which is practically limited to infants and very young children, not fewer than 68 per cent. of the total deaths being those of infants under the age of five years.

Tuberculous peritonitis is another affection due to the same parasite which is mainly fatal at the earlier ages. The mortality from this disease also was much lighter in 1902 than the corrected average. It is because of the ambiguity attaching to the term tabes mesenterica, which unfortunately is still sometimes used as a synonym for tuberculous peritonitis, that difficulty arises in estimating

the actual saving of life due to reduction of mortality from diseases of the tuberculous class. Among the other more important diseases dealt with in the report there are two only that showed abnormally high fatality in the year 1902; these were cancer and diabetes mellitus. The recorded death-rate from the disease last named has been steadily increasing for many years past, but it is probable that some of this increase is apparent only and is due to improved medical diagnosis. According to the returns the mortality from diabetes mellitus is greater in extra-metropolitan England than in London and is increasing much faster among women than among men.

In view of the increased scientific interest now taken in regard to cancer prevalence the statistics of mortality from this disease are properly very complete although the corresponding data with respect to its incidence are still sadly lacking. The tables before us show that in proportion to population the fatal cases of malignant disease are now more numerous than formerly. Nevertheless, some consolation may be derived from the fact that although the death-rate has continued to increase year by year the rate of increase was less in 1902 than in the year immediately preceding, notwithstanding the more precise classification now in vogue. In view of this encouraging fact the Registrar-General remarks: "The nature and origin of this disease being now the subject of careful investigation under Royal patronage it is permissible to hope that the cause of this distressing malady will ere long be discovered and that thus its further ravages may at least be controlled." Until quite recently cancer was believed to be more prevalent in the rural districts than in the urban, this opinion being based on examination of crude rates of mortality—that is to say, the rates uncorrected for age differences in the population. But when the necessary correction has been made the opposite conclusion follows; this is shown in the present tables, from which it may be gathered that the country rates are much lower than those of the town. There is, however, little doubt that our great towns are unfairly handicapped in this respect on account of the presence therein of large hospitals and other establishments to which country patients resort for the operative treatment of cancer. Inasmuch, however, as no correction has hitherto been attempted for this complication too much reliance should not be placed on the figures contrasting urban with rural mortality from this disease.

THE REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1902.[1]

THE volume containing the report of the Sanitary Commissioner with the Government of India for 1902 is somewhat reduced in bulk as compared with its predecessors but it embodies the same subjects and travels over the same ground. The fact that these reports deal with the events making up for the most part the medical and sanitary history of India as a whole necessarily entails considerable delay in publication, during which the official returns and data have to be collected, arranged, analysed, and commented upon, all of which, it is needless to say, give rise to a good deal of laborious work. It is not so surprising therefore as it may seem at a casual glance that the facts and figures relating to 1902 should not see the light until the end of 1903 and should only now come under review.

Passing over the first section dealing in a very brief and summary way with the meteorological conditions of the year we come to Section II. relating to the European army of India. The health of British troops serving in India in 1902, with an average strength of 60,540, compares in one respect unfavourably with the previous year in that the death-rate (14·68) was higher. The chief causes of admission into hospital were venereal diseases and ague, which accounted for 26 per cent. and 23 per cent. respectively of the total number of admissions from all causes. Venereal diseases and enteric fever gave rise to increased admission-rates as compared with 1901. The chief causes of death in 1902 were, as in 1901, enteric fever and abscess of the liver. Enteric fever accounted for 29 per cent. and abscess of the liver for 13 per cent. of the total number of deaths. Among the troops comprising the Delhi manœuvres and Durbar force the chief cause of death was, we learn, enteric fever, accounting as it did for 56 per cent. of the total number of deaths among the troops of this force. It is a deplorable fact that, despite what bacteriological science has done in giving more precision to our investigations, and despite all the efforts made to search out and remove the causes of enteric fever, so little has been really accomplished in lessening the prevalence of that disease in India. While the frequency of epidemics and the losses from cholera among British troops in India have been decreasing for many years past we have failed to make much, if any, impression upon the prevalence and amount of enteric fever in that country.

As regards commands and stations, Bombay was the most unhealthy of the four commands, Bengal coming next. Among stations of over 100 strength the highest death-rates were recorded at Barrackpore, Murree, Kakool, Naini Tal, Attock, and Fatehgarh. Abscess of the liver was the chief factor in the mortality at Barrackpore and Naini Tal; and enteric fever at Kakool. Among stations of over 1000 strength the highest death-rates were recorded at Colaba and Kurrachee, enteric fever being the chief cause at the former station. There were only three cases of cholera admitted among the European troops during 1902, as compared with 12 cases in 1901 and 107 cases in 1900. In nearly all stations where a decrease occurred in the admission-rate for ague in 1902 as compared with 1901 the decrease was not unnaturally attributed wholly or partially to the measures taken to prevent the breeding of anopheles mosquitoes. The decrease in the admission-rate for malaria at Mian Mir was far greater than at any other cantonment in India and the measures undertaken there in anti-malarial operations, which were very skilfully devised and superintended by medical experts, are well set forth in the Sanitary Commissioner's report (*vide* Section IX., pp. 103-07) and are also described by Dr. J. W. W. Stephens in a paper published in THE LANCET of March 5th, p. 637. The difficulties to be grappled with in India are immense and will probably appear insuperable to those acquainted with that country. Mian Mir cantonment, it will be remembered, had been examined by the Royal Society's malaria commissioners in 1901 and operations based upon their recommendations were vigorously carried out in 1902. The Sanitary Commissioner with the Government of India considers that on the whole the results of the experiment are against the employment of anti-mosquito measures as a practical means of combating malaria in such cantonments as Mian Mir. As regards the administration of quinine to the troops, however, he thinks that the experiments clearly showed that 15 grains of quinine on two successive days weekly was a powerful means of combating malaria. There were eight admissions and one death from Malta fever returned in 1902 as compared with five admissions and no death in 1901, but the Sanitary Commissioner is sceptical as to the existence of this form of fever in India and as to the value of the serum reaction as a means of diagnosing it. No serious attempt has, he says, apparently been made in India to isolate the micrococcus Melitensis and the proof of the existence of this disease in India rests solely on the results of reactions obtained between cultures of the micrococcus and the serum of patients suffering from "fever."

The report deals very carefully with enteric fever, its etiology and causes, pathology and varieties, 17 pages being devoted to the subject and to passing in review and epitomising the additions, real and alleged, that have been made to our knowledge in these respects as represented in the latest contributions to the literature of enteric fever. A list of the numerous papers and books consulted and referred to is given at p. 30 *et seq.* It presents as usual a very useful and interesting part of the report but we have said so much upon the subject on previous occasions that there is no need to dwell upon it now.

Section III. deals with the native army of India and gives interesting and valuable information regarding the nature of the fevers affecting native troops and prisoners as compared with European troops. It is well known that whereas statistical evidence shows clearly a very high

[1] Annual Report of the Sanitary Commissioner with the Government of India for 1902, with Appendices and Returns of Sickness and Mortality among European Troops, Native Troops, and Prisoners in India for the Year. Calcutta: Office of the Superintendent of Government Printing, India. 1903. Pp. 115 + xx + 125. Price Rs. 3, or 4*s.* 6*d.*

death-rate from enteric fever among European soldiers in India it shows a very low one indeed from this fever in the native army and jail population of India. The fever statistics do not reflect, says the Sanitary Commissioner, the opinion so prominent of late that enteric fever is quite common among *adult* natives of India. Lest it should be thought that enteric fever when it occurs among natives is not correctly diagnosed, but is returned under some other heading, the Sanitary Commissioner significantly adds that whether we take the case of native troops or prisoners their mortality from all fevers is considerably below that of European troops from enteric fever alone.

Passing on to Section IX. of the report there is some interesting and instructive information to be found under the heading of "General Remarks." From a health point of view, as well as from a political and spectacular aspect, the Coronation Durbar at Delhi was, as we know, a remarkable success and the brief reference thereto at p. 102 is worth reading. We have already referred to the subject of malaria in connexion with the experiments which were commenced at Mian Mir in 1902, and which have been carried on up to the date of the publication of this report. An excellent *résumé* of the literature of trypanosomiasis to be found, beginning at p. 108 of this section, to which we may call attention, and at p. 112 there is an interesting account of the discovery by Major W. B. Leishman, R.A.M.C., of an important parasite, together with its history and the work that has been done in connexion therewith.

INTERNATIONAL CONGRESS OF OTOLOGY.

THE seventh International Congress of Otology was held at Bordeaux from August 1st to 4th, the President being Dr. MOURE.

At the opening meeting the PRESIDENT delivered an address upon the History of Otology in France, commencing with the work of Duverney in 1683.

The Choice of a Simple and Practical Acoumetric Formula.

A joint report upon this subject was presented by Dr. POLITZER (Vienna), Dr. DELSAUX, and Dr. GRADENIGO (Turin), who form a permanent committee meeting once a year for studying the points still undecided. Dr. QUIX (Utrecht), Dr. PANSE (Dresden), Dr. TRÉTRÔP (Antwerp), and Dr. BONNIER (Paris) read papers on the same question.

The Diagnosis and Treatment of Suppuration of the Labyrinth.

Dr. BRIEGER (Breslau) said that the radical mastoid operation might lead to the spontaneous cure of a suppurating labyrinth, or, on the other hand, the suppuration, latent before, might become active after the operation and provoke fatal meningitis. He gave the indications, according to the present state of knowledge, for operation on the labyrinth and described the methods of procedure.

Dr. VON STEIN (Moscow) said that he distinguished cases according as the bony capsule, the perilymphatic space, the endolymphatic system, or the whole of the organ was affected.

Dr. J. DUNDAS GRANT (London) spoke of the relations of labyrinthitis to meningitis and to cerebellar abscess. He also discussed the symptoms and compared them with those of cerebellar abscess, with which it was possible also that a labyrinthine suppuration might co-exist.

Dr. POLITZER showed some preparations of morbid changes in the labyrinth in connexion with chronic suppurative otitis media.—Dr. PANSE, the PRESIDENT, and Dr. ESCAT (Toulouse) also made communications upon the subject.

The Technique of the Opening and After-treatment of Otogenous Cerebral Abscess.

Dr. KNAPP (New York) showed an instrument designed by Dr. Whiting (New York) for examining the walls of the abscess cavity. In the after-treatment the most serious troubles were hernia cerebri (which was caused by a secondary abscess) and secondary abscesses inside the cranium.

Dr. SCHMIEGELOW (Copenhagen) advised that the operation should be planned so as to make it possible to explore both the cerebrum and the cerebellum. The anæsthetic should be given with great caution owing to the risk of failure of respiration.

Dr. BOTEY (Barcelona) said that the operation ought always to be commenced by an exploration of the mastoid and the tympanum, passing thence to the intracranial cavity. He advised that in nearly all cases the brain should be punctured through the intact dura mater before incising the latter, in order to make certain of the existence of an abscess, for when the dura mater had been opened by a knife the brain and meninges were much more exposed to infection. He condemned irrigation of the abscess cavity and advised drainage by means of several small tubes.

Dr. GRADENIGO described a special form of intracranial complication with the following association of symptoms—acute otitis media, severe pain in the corresponding side of the head, especially in the temporo-parietal region, and later paralysis of the external rectus on the same side.

Sir WILLIAM MACEWEN (Glasgow) said that he treated the aural and cerebral foci and excised the morbid track between them; neglect of the latter precaution was a frequent cause of recurrences. He preferred chloroform as an anæsthetic rather than ether because the latter induced œdema of the brain. If after having incised the dura mater no adhesions were found in the subarachnoid space he waited 24 hours before incising the brain. After as free an incision as possible he irrigated with the greatest gentleness and used either no drain or at the most sometimes a strand of gauze.

Numerous other communications were made by various speakers, among whom Dr. BROECKAERT (Ghent) showed an ingenious syringe for injecting paraffin while cold; Dr. DENCH (New York) contributed a paper on the Radical Mastoid Operation; and Dr. GRADENIGO and Dr. POLITZER urged the necessity of making the study of otology a compulsory subject.

A small museum of pathological specimens, models, and instruments was arranged in one of the rooms at the School of Medicine where the Congress was held.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Borough of Preston.—The history of the isolation of small-pox in this borough during 1903 affords an instructive example of the risks which attend the use of "temporary" hospitals. In 1888–89 a temporary building was erected to cope with an epidemic of small-pox. It was afterwards taken down and stored away until 1893, when it was rebuilt upon its present site and again used in 1903. On Feb. 27th there occurred a gale which completely demolished the eastern wing which, by a happy circumstance, was unoccupied at the time. The remainder of the building was subsequently rendered more secure by props and other supports. There are other instances on record of disasters such as these, and we have heard of children suffering from diphtheria having to be taken from the hospital during a violent snowstorm and placed under a hedge until assistance could be secured. There can be no doubt that although these temporary structures have their advantages their ready destructibility by fire or storm renders them very unsuitable for the isolation of patients acutely ill or otherwise incapable of speedy removal. Two female health visitors were appointed at the beginning of 1903 and they have already done good work in dealing with the excessive infantile mortality for which Preston bears an unenviable notoriety. Mr. H. O. Pilkington, the medical officer of health, mentions the cases of mothers who have had 15, 12, 10, 9, 8, 6, and 5 children, and who have buried 8, 7, 5, 7, 7, 4, and 5 of their offspring under the age of 12 months. The reports of the female health visitors suggest that had the conditions of feeding and nursing of these children been better several of their lives might have been spared.

The Borough of Eastbourne.—The question of providing accommodation at the isolation hospital for cases of pulmonary tuberculosis was considered by the council of this borough during 1903, but after full consideration Dr. W. G. Willoughby, the medical officer of health, arrived at the conclusion that such a course would be undesirable. Dr. Willoughby thinks that it is not the proper function of a

sanitary authority "to set up a second infirmary for the chronic and practically hopeless cases that now find their way into the union infirmary." Such cases should, he thinks, be dealt with by the guardians. But apart from this there does not seem to be a suitable building at the fever hospital for the purpose of treating consumptive patients, and Dr. Willoughby thinks that even if there were a suitable building the presence of consumptive patients might from a sentimental standpoint injure the present popularity of the institution. The other objection which he raises seems to us to have even greater force—i.e., that the consumptive patients would have a prejudice against the hospital from the fact that the acute exanthemata are treated there.

Plympton St. Mary Rural District.—Mr. S. Noy Scott speaks appreciatively of the work of the Didworthy Sanatorium for Consumption which has recently been opened near Brent for the consumptive poor of Devonshire. He does not, however, speak enthusiastically as to the results of sanatoriums generally. As he observes, it is impossible to segregate into these institutions even a small proportion of the large number of persons who are suffering from pulmonary tuberculosis and it seems, he thinks, "almost foolish to expect that the isolation and treatment of a few of these people for a few months will produce any marked effect upon the prevalence of the disease or reduce the death-rate in any way proportionate to the cost which such treatment involves." He sees, too, great difficulty in continuing to provide the discharged patient with anything approaching the abundant food which has formed such an essential part of the sanatorium treatment.

The Borough of Torquay.—A very useful and encouraging method of inspecting the dairies, cowsheds, and milkshops in this borough was introduced by the late Mr. P. Q. Karkeek, the former medical officer of health, and is continued by Dr. Thomas Dunlop, his successor. Twice yearly a systematic inspection is made, not only of the dairies and cowsheds in the borough, but also of all the dairy farms outside the borough limits which send their milk into the borough. As an outcome of these inspections a register is compiled which is printed in the form of a bill and posted up throughout the town, copies being forwarded to all the dairymen and farmers concerned. These bills, which may be regarded as a species of informal licence, are in force for six months, when another inspection takes place. The farmers apparently welcome the inspections and endeavour to carry out the suggestions made, and a very material improvement in the former condition of affairs appears to have taken place. But Dr. Dunlop thinks that sufficient care is not taken in the milking of the cows and he states that when some of the milk is treated in a separator the sediment betrays signs of material of which the healthy udder is innocent. Proper means for washing the hands of the milkers are rarely seen and the milkers do not wear overalls. This is not satisfactory and we should like to see the facts stated on the bill. The cow's udders and the milker's hands should be washed before the operation, the milk should be strained immediately after milking, and it should then be cooled. All the utensils should be subsequently scalded or preferably steamed. The Torquay methods are admirable so far as they go but we cannot help thinking that the informal licences in vogue may prove somewhat a false security if, that is to say, the bills which are posted are intended to imply freedom from the likelihood of specific contamination. We hope that Dr. Dunlop will continue to deal with this very important subject in his future annual reports and that he will record annually the further progress which he has been able to make. The Torquay example might be usefully followed in other places.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8896 births and 6639 deaths were registered during the week ending August 20th. The annual rate of mortality in these towns, which had been 16·4, 19·8, and 22·1 per 1000 in the three preceding weeks, further rose last week to 22·7 per 1000. In London the death-rate was 21·6 per 1000, while it averaged 23·2 in the 75 other large towns. The lowest death-rates in these towns were 7·8 in King's Norton, 9·6 in Handsworth (Staffs.), 10·5 in West Hartlepool, 10·7 in Blackburn, 11·8 in Hastings and in Devonport, 12·0 in Burton-on-Trent, and 12·1 in Bournemouth; while the highest rates were 31·0 in Hanley, 31·4 in Tynemouth, 31·8 in St. Helens, 32·1 in Salford, 32·3 in Tottenham, 33·4 in York, 34·0 in Wigan, 34·6 in Bootle, and 39·1 in Liverpool. The 6639 deaths in these towns last week included 2842 which were referred to the principal infectious diseases, against 1255, 2059, and 2710 in the three preceding weeks; of these 2842 deaths, 2538 resulted from diarrhœa, 130 from measles, 79 from whooping-cough, 39 from diphtheria, 30 from "fever" (principally enteric), and 26 from scarlet fever, but not any from small-pox. The lowest death-rates last week from these principal infectious diseases were recorded in Hastings, Bournemouth, Devonport, Burton-on-Trent, King's Norton, Stockton-on-Tees, West Hartlepool, and South Shields; and the highest rates in Tottenham, East Ham, Grimsby, Birkenhead, Liverpool, Bootle, York, Hull, and Rhondda. The greatest proportional mortality from measles occurred in Blackburn, Huddersfield, Halifax, Bradford, and Rhondda; and from diarrhœa in Tottenham, West Ham, East Ham, Leyton, Reading, Grimsby, Liverpool, Bootle, Wigan, York, and Hull. The mortality from each of the other principal infectious diseases showed no marked excess in any of the large towns; and no fatal case of small-pox was recorded either in London or in any of the 75 large provincial towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 46, 32, and 21 at the end of the three preceding weeks, had further declined to 18 at the end of last week; two new cases were admitted during the week, against seven, two, and none in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last, August 20th, was 1745, against 1784, 1758, and 1763 on the three preceding Saturdays; 198 new cases were admitted during the week, against 243, 166, and 189 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 118, 112, and 121 in the three preceding weeks, declined again last week to 106, and were 14 below the number in the corresponding period of last year. The causes of 39, or 0·6 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Bradford, Leeds, Newcastle-on-Tyne, and in 49 other smaller towns; while the largest proportions of uncertified deaths were registered in Liverpool, St. Helens, Manchester, Halifax, South Shields, Gateshead, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·1, 14·6, and 15·7 per 1000 in the three preceding weeks, further rose to 17·1 per 1000 during the week ending August 20th, but was 5·6 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 7·8 in Leith and 12·3 in Perth, to 20·2 in Greenock, and 21·1 in Paisley. The 567 deaths in these towns included 66 which were referred to diarrhœa, 16 to whooping-cough, seven to measles, four to scarlet fever, and one to diphtheria, but not any to small-pox or to "fever." In all, 94 deaths resulted from these principal infectious diseases last week, against 58, 85, and 109 in the three preceding weeks. These 94 deaths were equal to an annual rate of 2·8 per 1000, which was 6·9 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 24, 48, and 63 in the three preceding weeks, declined again last week to 66, of which 44 were registered in Glasgow, five in Aberdeen, five in Leith, four in Edinburgh, four in Dundee, and three in Paisley. The deaths from whooping-cough, which had been 26 in each of the two preceding weeks, decreased to 16 last week, and included 11 in Glasgow and two in Dundee. The fatal cases of measles, which had been seven, five, and six in the three preceding weeks, rose again last week to seven, of which three occurred in Glasgow. The deaths from scarlet fever, which had been two, one, and two in the three preceding weeks, further rose to four last week, and included two in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 55, 47, and 39 in the three preceding weeks, rose again last week to 47, but were slightly below the number in the corresponding period of last year. The causes of

22, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9, 21·2, and 27·1 per 1000 in the three preceding weeks, declined again to 24·5 per 1000 during the week ending August 20th. During the past four weeks the death-rate has averaged 22·7 per 1000, the rates during the same period being 19·7 in London and 14·2 in Edinburgh. The 178 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 18 from the number in the preceding week and included 43 which were referred to the principal infectious diseases, against 13, 25, and 46 in the three preceding weeks; of these, 33 resulted from diarrhœa, four from measles, three from whooping-cough, two from "fever," and one from diphtheria, but not any from either small-pox or scarlet fever. These 43 deaths were equal to an annual rate of 5·9 per 1000, the death-rates last week from the principal infectious diseases being 8·8 in London and 1·4 in Edinburgh. The 33 fatal cases of diarrhœa corresponded with the number in the preceding week. The deaths from measles, which had been four, three, and five in the three preceding weeks, declined again last week to four. The fatal cases of whooping-cough, which had been four in each of the two preceding weeks, decreased last week to three. The 178 deaths in Dublin last week included 60 among children under one year of age and 27 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a decline from the number in the preceding week. Seven inquest cases and four deaths from violence were registered; and 57, or nearly a third, of the deaths occurred in public institutions. The causes of nine, or more than 5 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is notified:—Staff Surgeon C. S. Facey to the *President*, for three months' hospital study.

ROYAL ARMY MEDICAL CORPS.

Captain J. H. Campbell, D.S.O., has arrived at the Station Hospital, Western Heights, Dover, and Captain S. H. Fairrie has arrived at the Station Hospital, Canterbury, both for duty.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major W. M. Roocroft to be Surgeon-Lieutenant-Colonel (dated August 2nd, 1904).

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Captain G. Hollies to be Surgeon-Major (dated August 20th, 1904). 1st Volunteer Battalion the Manchester Regiment: Surgeon-Major W. M. Roocroft to be Surgeon-Lieutenant-Colonel (dated August 20th, 1904).

DEATHS IN THE SERVICES.

Surgeon-Major-General Alfred Malpas Tippetts, A.M.D. (retired), recently at Southsea. He joined the army in 1854, became surgeon in 1864, surgeon-major in 1879, deputy surgeon-general in 1880, and surgeon-general in 1891. He served in the Eastern Campaign, 1854-55, with the 7th Fusiliers, including the affair of Bulganac, battles of Alma and Inkerman, and siege of Sebastopol (medal with three clasps and Turkish medal); served in the Afghan war of 1878-80, and took part in the expeditions into Bazar and Hisarik Valleys (medal). He retired with the rank of surgeon-major-general in 1892. A Distinguished Service Reward of £100 a year falls vacant by the death of Surgeon-General Tippetts.

Inspector-General Dugald M'Ewan, H.P.K., R.N. (retired), on the 22nd inst., at Bedford. He reached the rank of inspector-general in 1887.

THE RETIREMENT OF LIEUTENANT-COLONEL A. F. S. CLARKE, A.M.S.

The retirement of Lieutenant-Colonel A. F. S. Clarke, Army Medical Staff, from the post of surgeon of the Royal Military College, which he vacates on account of his having reached the age limit, is a matter calling for some notice on our part. During the time he has held the appointment he has been devoted to his work and to the interest of the college and all concerned therewith. The post is a difficult and responsible one to fill but Colonel Clarke is an officer of sound judgment with a knowledge of the work he had to do, as well as great kindliness and absolute honesty in the doing of it.

THE WAR IN THE FAR EAST.

The news from the seat of war—such as there is—is of military and not of a medical nature. Beyond the fact that a fierce conflict is raging round Port Arthur and that the garrison of that strong fortress is being hardly pressed we really know but little of what is actually taking place there at the present time. As regards the progress of the war in Manchuria the heavy rains have for the moment put an end to military operations. The rumour is that there is much inefficiency from sickness among the Russian troops under the command of General Kuropatkin.

Correspondence.

"Audi alteram partem."

HOT WEATHER AND FOOD PRESERVATIVES.

To the Editors of THE LANCET.

SIRS,—The wave of exceptionally hot weather that has recently visited this country has been followed by the usual epidemic of infantile diarrhœa and the mortality in all the great centres of population has risen in consequence, Liverpool heading the list with a death-rate of 37·7 per 1000. In the conditions under which multitudes of the poor live it is not a matter for surprise that diarrhœa due to the consumption of decomposing food should be extremely prevalent. Even in the houses of the well-to-do it has been difficult to keep milk, fresh meat, and fresh butter in a condition fit for consumption for more than a few hours and some of it has often had to be thrown away as not above suspicion. In the slum dwellings of our great cities the difficulty of keeping fresh food in a state fit for consumption must be well-nigh insurmountable. The air of the overcrowded rooms reeks with organic emanations from the bodies and clothes of the inhabitants; water has to be fetched from a standpipe outside and is used sparingly; there are no relays of dishes or other receptacles to hold the food, such receptacles as exist are dirty; there is nothing to keep off the flies, and when food goes bad the family must eat it or do without any. These conditions are not peculiar to Liverpool but are met with in all large cities, but there is one circumstance about Liverpool which I think explains, in part at least, their disastrous influence on the health of the children there during the last few weeks. For some years past the authorities in Liverpool have been carrying on a crusade against the use of boric acid and salicylic acid as preservatives in food and I am of opinion that the success of the authorities in putting a stop to the use of preservatives has laid the public open to serious risks from poisoning from decomposing food. Some months ago, when discussing the question of preservatives with an official who was strongly opposed to their use on the ground, as he alleged, that by sterilisation the food could always be delivered to the consumer in good condition, I asked him how it was to be kept from going bad directly it was opened. His answer was that the officials had nothing to do with the food after it had reached the hands of the consumer, that the only business of the officials was to see that the consumer got it pure, which meant in this connexion free from preservatives. This view may satisfy the official mind but it is not sense. I have more than once invited the opponents of the use of preservatives to bring forward a single instance in which any human being has suffered from the reasonable use of boric acid or salicylic acid as preservatives in food, but they have not brought forward a single case that would bear investigation. The objections to their use are purely hypothetical, chiefly resting upon feeding experiments on young animals which have been wrongly interpreted. On the other hand, no one

seriously disputes the danger of consuming food even in an early stage of decomposition and I assert without fear of contradiction that in the conditions under which the poor live in our large cities their food is certain to undergo rapid decomposition in hot weather unless preservatives are employed. I am, Sirs, yours faithfully,

THOS. R. BRADSHAW, B.A., M.D. Dub., F.R.C.P. Lond.,
Physician to the Liverpool Royal Infirmary.

August 21st, 1904.

THE AMALGAMATION OF THE LONDON ORTHOPÆDIC HOSPITALS.

To the Editors of THE LANCET.

SIRS,—As one of the governors of the City Orthopædic Hospital, by whose vote it was decided to refuse to incorporate with the two other orthopædic hospitals, I think it only right to state our reasons for this refusal and I think that when they have been considered the action of the Hospital Sunday Fund committee in refusing the usual grant to this most deserving institution for the purpose of coercing them will appear most unjustifiable. The City Orthopædic Hospital is worked at very small cost for administration and nearly the whole of the money subscribed goes to the patients. It is on a freehold site in one of the most accessible spots for the poorer inhabitants of London; it can be reached by a 1*d.* omnibus fare or 1*d.* railway fare from all the poorer districts of London. It treats a class of disease to which the poor are particularly subject.

It was proposed to amalgamate the three orthopædic hospitals and erect a large building at immense cost on a leasehold site at the West End of London, thus taking it too far away from the poor districts and spending a very large sum on bricks and mortar, which is at present available for relieving the very great sufferings of the people. The proceeding would increase the administrative expenses much out of proportion to the good to be derived from the amalgamation. I think that pressure must have been brought to bear in some way to prevent the usual grant, as I cannot understand anyone who has gone into the matter fairly refusing funds to so deserving a charity as ours. I feel sure that it is only necessary for anyone to visit this institution, which is situated in Hatton-garden, to see how carefully the committee have husbanded their resources and the very kind way in which the poor little sufferers are treated to insure plenty of donations and subscriptions to carry on this most humane work without the aid of the Hospital Sunday Fund committee. I am, Sirs, yours faithfully,

Sydenham, August 18th, 1904. JAMES A. PHILLIPS.

DOES BOILING IMPROVE THE KEEPING PROPERTIES OF MILK?

To the Editors of THE LANCET.

SIRS,—To most practitioners I apprehend that the boiling of milk at this season of the year for the purpose of "keeping it sweet" is an axiom of practice which I had always suspected admitted of no doubt. Recently, however, a friend of mine, a bacteriologist, vigorously attacked my instruction to boil milk. "Why," he asked, "do you boil the milk?" I replied: first, at this season of the year, to prevent souring and decomposition; secondly, to destroy pathogenic germs; thirdly, it is said to make the milk more digestible; and lastly, if the child has diarrhœa it is to help to constipate the child.

Now, does boiling the milk have a good effect on its keeping properties, especially under the contaminating influences of hot weather? I have always thought so, but my friend roundly declares that it is absolutely harmful, and for these reasons. First, he says that I confuse souring with decomposition or putrefaction. The one is due to lactic acid fermentation, the other to changes set up by dirt organisms or the organism of putrefaction, two altogether different processes and mutually antagonistic. When we set about boiling the milk we destroy the lactic acid organisms, which die, say, at or about a temperature of 180°, while the dirt organisms, which are spore bearing, are at that temperature quite unharmed. What, then, is the result? The milk is certainly, by the act of heating, prevented from souring and to outward appearances keeps good, but if it is kept for a few hours—probably all night—at the temperature of the room or flat, say, at or above 80°, putrefaction has full opportunity of taking place under the most advantageous circumstances and toxic agents are developed in the milk which are much more pernicious than the souring. Souring is such a visible process that it is unmistakable, but, on the other hand, these invisible toxic agents give no evidence of their existence, either in taste or smell (possibly in some instances the milk may become slightly sweeter), by which they can be recognised and these products, my friend declares, are often the deleterious substances which give rise to the fearfully sudden collapse in some infants about whose feeding the mothers have been more than usually careful by taking pains to boil the milk before using it. My bacteriological friend goes so far as to say that sour milk in itself is *not* harmful! This statement reminds me that in my native county basins of sour milk were eaten with avidity, mixed with the coarse brown sugar of olden days or with treacle, by the farm hands on many of the farms I have stayed at in the days of my youth. He urges strongly that the lactic acid fermentation is actually nature's own means of preventing the process of putrefaction owing to the fact that most of the putrefactive germs require an alkaline or neutral medium for their development and that this is impossible as long as the lactic acid germs are allowed to exert their influence, but directly we set about killing these by boiling we immediately give the putrefactive germs full scope to develop and this by the very means which we in our ignorance of nature's processes had hoped would be effective in the opposite direction.

I am, Sirs, yours faithfully,

RICHARD BEVAN, L.R.C.P. Lond., D.P.H.

Kensington, August 5th, 1904.

*** Boiling must obviously delay decomposition by destroying germs, but the effect, of course, can only be temporary if the milk is afterwards allowed to cool down exposed to the air. The destruction of pathogenic organisms is more likely to be effectually done by heating than by waiting for the development of lactic acid.—ED. L.

PREVENTION OF PUERPERAL FEVER.

To the Editors of THE LANCET.

SIRS,—The paper written by Professor Byers on this subject leads one to think furiously. For years past the members of the medical profession have listened to very tall talk from obstetricians and we are still to listen. A little incident occurred at Oxford at a discussion in the obstetrical section upon the treatment of accidental hæmorrhage which I trust will tend to make our obstetrical professors also consider. Professor Galabin informed his audience that he had been in favour of the treatment of vaginal plugging and was so at that moment; that he advocated this method in early editions of his little book for students but that he had omitted to do so in later editions because he found that his students complained that they failed to pass examinations for stating that this was the method which in practice they would adopt. The method in question, I may perhaps be allowed to state, is that which was taught by those great authorities, Dr. Rigby and Dr. Matthews Duncan. It was strange to find that the reintroduction of the method has been necessary.

I shall be glad to hear in what proportion of the reports written by medical officers of health annually is attention called to excessive puerperal mortality. If any accurate appreciation of the work performed by the ordinary working accoucheurs of Great Britain is undertaken some attention must be paid to the conditions of life which obtain in those parts of the country where puerperal mortality is high. So far as my limited lights allow me to form an opinion, the prevalence of puerperal sepsis—or indeed surgical sepsis—depends first upon the sound grounding of students in first principles by the teacher; secondly, upon the personal equation of the student; and thirdly, upon the general conditions under which the student, when he becomes a practitioner, is placed. Looking over the period since Hughes Bennet introduced the speculum and passing in review the various teaching concerning the so-called congestions and ulcerations of the cervix, concerning the use of pessaries, concerning operative interferences with women for disease not connected with pregnancy, and concerning operative interference with the various complications connected with pregnancy and childbirth, it is impossible to assert that the teachers of the third compulsory branch of professional

learning have, as a class, shown much capacity. Certain of them have succeeded in introducing their panacea of registration for midwives and a convenient time has arrived when those students who desire it should be relieved of the necessity of examination in a subject with which they do not intend to proceed in their professional capacity.

I am, Sirs, yours faithfully,

Hatfield, August 16th, 1904. LOVELL DRAGE.

THE NOMENCLATURE OF MALARIA.

To the Editors of THE LANCET.

SIRS,—The connexion between the prevalence of mosquitoes and the occurrence of malarial fevers has in the light of research during recent years assumed such importance that the systematic study of the various forms of these fevers as well as the life-history, habitat, and geographical distribution of anopheles mosquitoes is at present engaging the closest possible attention of the medical profession generally in all parts of the world where mosquitoes exist. To aid and facilitate these researches and in the interests of statistical accuracy I wish to bring to notice the existing official forms of nomenclature as laid down by the committee appointed by the Royal College of Physicians of London referring to the varieties of malarial fevers—namely, 24 (*a*) intermittent (synonym ague) and 24 (*b*) remittent.

I would therefore suggest that the present Nomenclature of Diseases, which is believed to be under revision, should be so altered as to embrace the various species or varieties of malarial fevers met with—all of which will, I think, fall generally under one of the following headings: (*a*) benign tertian; (*b*) quartan; (*c*) cachectic or chronic; (*d*) malignant tertian. We would thus avoid such general terms of no scientific or statistical use as intermittent and remittent fevers as laid down in the last edition of the Nomenclature of Diseases.

I am, Sirs, yours faithfully,

E. BLAKE KNOX, M.D. Dub.,
Captain, Royal Army Medical Corps.

Simla, India, August 4th, 1904.

HEREDITY.

To the Editors of THE LANCET.

SIRS,—Your current issue (August 20th, pp. 535-537) contains a report of the discussion upon heredity at the Oxford meeting of the British Medical Association. In it are some things attributed to me which I did not say and others to which I replied at Oxford but of this there is no mention in the report. In reply to the discussion, I spoke for half an hour, of which time a fair amount was devoted to the fallacies, misquotations of scientific literature, and false conceptions of my work and position brought forward by Dr. W. Lloyd Andriezen. After the report of his remarks (with sundry subsequent alterations) to the length of very nearly a column, my "reply" is condensed into rather less than two lines, which, moreover, I must be content to share with Dr. W. König! My acquaintance with scientific work and discussion is sufficiently great to teach me what serious damage may be done to scientific conclusions when wrongly understood and falsely attacked. In particular, I would claim your courtesy to define my standpoint towards the remarks, as published in your journal, of Dr. Andriezen. These nearly equal in length the account of my paper, and, indeed, they occupy a much larger space in the report than they did in the actual discussion. Anyone reading his remarks might naturally draw the conclusion that the speaker completely undermined and destroyed my position, whereas, as a fact, he really never approached it. In the first place, there was in my paper no reference at all to plants, and as little was it stated that "the phenomena of heredity were limited to the germ cells of plants and animals." I am not a botanist except in an amateur way, and have never presumed to teach the botanists anything about heredity in plants which they did not already know. In my Oxford paper, for obvious reasons, only heredity in the higher animals was dealt with. Again, at Oxford, in reply I repudiated, and would now do so as strongly, ever having described Darwin's theory as "a complete fallacy." My respect for Darwin's memory is too great. Moreover, the existence of what Darwin termed "natural selection" cannot be denied, but with de Vries and others I maintain that it does not affect what Darwin and his followers have supposed it to. Indeed, while there is undoubtedly an elimination of the unfit (as well as of the fit!) individuals, this possesses no import for problems of heredity and variation. In these only the individuals which breed are important.

Dr. Andriezen's remarks were based partly on misconceptions of my words (probably due to lack of acquaintance with my writings), partly on false statements of fact and observation, and partly on misquotation of embryological literature. My descriptions of the origin of the germ cells and of the nature and course of heredity were founded on actual observation extending now over more than 15 years. Against these my critic merely made unfounded assertions and brought forward no evidence. Anyone reading his remarks might imagine that by his own observations, confirmed by those of "Eigenmann and recent workers," he had revealed the falsity of my facts and conclusions. As a fact, such observations have at present no existence and the only results opposed to mine—those of Waldeyer (1870)—have been abandoned by their author. If the speaker had ever read my writings he would never have said that I "ignored the most patent and striking facts of every-day life and evolution." It has a fine sound but there is nothing in it! The influences upon the germ cells of which he spoke, climate, food, toxins, disease, &c., have been allowed their due value by me but at the same time the term "acquired characters" has proved to be meaningless in the light of the actual facts of development which, without observation, my critic is the first to call in question. The foregoing term, since there is in development no direct handing-on of anything at all from the individual to the germ cells, is pure nonsense and instead thereof the conceptions of somatic (individual) and genetic (germinal) variations were adopted. In this I have followed Sedgwick and Ford Robertson. As to Weismann's term "amphimixis," I do not admit it to be a fact that the union of egg and sperm is the "mixing" of two individualities or "the mingling of two germ plasms" in Weismann's sense. This is an embryological question and I am not in the least concerned as to what views my friend Professor Haycraft may hold concerning the rôle of "amphimixis," the existence of which in Weismann's sense I deny. Holding firmly to the facts, I merely say that fertilisation of the egg is the joining together of two individualities, of two potential sets of characters. The speaker quoted Weismann as holding amphimixis to be an effective cause of variation: what Weismann actually maintains is, that amphimixis is "not the real root of variation itself." On p. 219, vol. ii., of his "Vortraege ueber Descendenztheorie" Weismann writes: "Ich betrachte sie aber nicht als die eigentliche Wurzel der Variation selbst."

A more glaring case of misquotation by Dr. Andriezen was the reference to Eigenmann's investigations. I have no concern with the vague mention of the researches of "recent workers" as refuting my views, for if these possess any value they deserve particular mention. This is to all intents a reproach of ignorance of recent embryological literature, and to me something quite novel. With deference I ask Dr. Andriezen for chapter and verse for the researches of "Eigenmann and recent workers" whose results conflict with mine. In advance I assert that they cannot be produced. As to Eigenmann's work, I occasionally correspond with Professor Eigenmann, possess many of his papers, and know them all. But the one—where does it exist outside my critic's imagination?—to which Dr. Andriezen referred at Oxford, upon the germ cells of amphibia, is not in my possession, not cited in Waldeyer's recent long list of literature, and to my knowledge Professor Eigenmann has never published any researches upon the germ-cells of amphibia! If my critic really knew Eigenmann's work upon the germ cells (which I rescued from oblivion) and mine he would be aware that there was nothing contradictory in our results. The matters treated of at Oxford by the writer were entirely embryological. Has my critic, who, without understanding them, made a great show of opposing my conclusions, ever made any investigations in this science? There is no evidence of this and even his citations from its literature only exist in his own mind. In order to explain the present state of my researches a long paper, entitled "A Morphological Continuity of Germ Cells as the Basis of Heredity and Variation," was recently published in vol. ii., 1904, of the *Review of Neurology and Psychiatry* (Otto Schulze and Co., Edinburgh). This was written specially for

alienists. In the brief time at Oxford, as I explained, it was impossible to do more than lay down for discussion a number of theses which I was prepared to defend. I was obliged to assume that the speakers would be acquainted with the memoir above mentioned, more especially as a full reference to it, as well as to a similar paper by my friend, Dr. Ford Robertson, was given in the summary published a month earlier in the *British Medical Journal*. As a matter of fact, with the exceptions of Dr. C. A. Mercier, Dr. König, and Dr. A. S. F. Grünbaum, and of Dr. Archdall Reid, who sent to the secretaries a fairly lengthy criticism of what he supposed to be my conclusions, none of the speakers, Dr. Andriezen not excepted, had the faintest idea of the work which has now occupied me since 1888. One who was present has since written to me what a pity it was that so few of the speakers at Oxford had studied the aforesaid paper more, for, in his opinion, they had failed to grasp the idea. Comment is needless. Discussion is useless, if a critic does not know the real nature of the thing he is vainly attempting to destroy. Lastly, wherein, to quote from the reporter of THE LANCET, were "many of the theories propounded by Dr. Beard wrong"? Possibly it may not be as easy to prove this, as to state it!

I am, Sirs, yours faithfully,

Edinburgh, August 23rd, 1904. J. BEARD.

THE EYRE TESTIMONIAL.

To the Editors of THE LANCET.

SIRS,—May I through the medium of your columns express my very sincere thanks to the many friends who have given such practical shape to their sympathies and have relieved me of the costs incurred in my recent action against the Scottish Accident Company. I would also like to take this opportunity of marking my deep appreciation of the sentiments contained in the letters on the subject received by both Dr. J. H. Bryant and myself—letters so numerous as to render it impossible for me to reply to each individually.

I am, Sirs, yours faithfully,

August 17th, 1904. JNO. EYRE.

LAYMEN AND ELECTRICAL TREATMENT.

To the Editors of THE LANCET.

SIRS,—The remarks of Dr. E. Stanley Smith in THE LANCET of August 6th, p. 423, in reply to my letter are so unusual that I find it somewhat difficult to believe that he is in earnest or to understand the spirit in which his letter is penned. Is it "writ sarcastic," or can it be that in all seriousness he advances the statements made therein as arguments in the support of the position of the lay medical electrician? Does he wish to place the qualified medical specialist in open competition with the unqualified person however skilful he may be, and to recommend his patients to the latter because he considers that his charges are lower? It is difficult to believe that the profession has fallen quite so low as this. Even here Dr. Smith is, as our transatlantic cousins would say, a little previous, for he entirely begs the question when he states that the charges of the lay electrician are so much more moderate than those of the properly qualified medical specialist. I know of a great many cases where the amount obtained by these gentlemen from patients has been very large indeed, and judging from the price lists which I have obtained from several of their institutions it is evident that they do not err on the side of excessive moderation. No, Sirs, they charge good fees, and what is more they get them in advance. On the other side, there are plenty of skilful medical electricians who are perfectly willing to undertake cases requiring treatment daily for from two guineas weekly, according to the circumstances of the patient, the nature of the treatment required, and the amount of individual attention necessary, for it is practically essential for a medical man practising in electro-therapeutics to employ a nurse or nurses—it would be impossible for him to get through his work if he had to attend to all the mechanical details of the applications himself.

In Dr. Smith's statement that in his opinion an unqualified person who possesses an "intimate knowledge of electricity and a 'slight knowledge of anatomy" is competent to administer electrical treatment, we have a view so preposterous that it is again difficult to believe he is serious. Because a man has an intimate knowledge of drugs and a slight knowledge of physiology is he competent to treat disease? Because a person is thoroughly acquainted with the principle of mechanics and has a slight knowledge of anatomy does Dr. Smith consider him competent to set a fracture or reduce a dislocation? Some time ago the General Medical Council very properly put a strict limit on the conditions under which an unqualified assistant might be employed. Men who had taken out their full curriculum, had perhaps passed all but the qualifying examination, and had acquired considerable experience of disease during their various engagements were no longer allowed to see and prescribe for even the simplest cases, much less visit or attend midwifery, and if they exceeded their duties their employers were liable to suffer blame and perhaps even more serious consequences. Why should these men have been thrown out of employment, often almost to beg from door to door, when a man calling himself a "medical electrician" is allowed to carry on a practice, see, prescribe for, and apply treatment to patients *covered* and supported by often eminent members of the medical profession? It is a gross injustice, Sirs, to the unqualified assistant whom we have abolished, and it is a still grosser injustice to the medical electrician who is forced into competition with the quack by the action of his brethren. Surely it is a sad confession, if it is true, that the medical man sends his patients to a layman because he fears that his diagnosis might be overhauled. In no branch of the profession have I found a more strict adherence to the highest principles of professional honour and honesty than amongst those devoted to the practice of electro-therapeutics.

I have read the letters in your issue of August 13th of the secretary to the British Electro-Therapeutic Association and of Mr. Clarence A. Wright. I am perfectly in accord with the sentiments and opinions expressed by these gentlemen, but I would go further still. I cannot but think that it is the duty of those associaions formed for the defence of the profession to deal with the medical men, however eminent may be their position, who by their action are covering the practice of unqualified persons.

I am, Sirs, yours faithfully,

August 18th, 1904. FAIR PLAY.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

An "Accident."

A MOST extraordinary statement was made in a case tried at the Assizes which have just concluded in Birmingham. Mr. Jewsbury, a well-known personage in Harborne, a suburb of Birmingham, had insured his life with the British National Premium Life Insurance Company for £1000 ten years ago. In September of last year he took out a second policy for a similar sum with the same company. In the following November he had the misfortune to sustain a severe burn whilst taking a Turkish bath, blood-poisoning ensued, and he succumbed to it after a short illness. The company paid on the first insurance but refused to do so on the second, alleging that material information was withheld in the application for the policy. In reply to questions as to whether he had ever been medically treated or had an accident the deceased gentleman had replied "No," whilst as a matter of fact it turned out that he had once strained his thumb whilst trying to sit down on an upturned seat at a theatre, and on another occasion had injured his knee by slipping upon a piece of banana peel. The widow brought the matter into court in order to secure payment of the second insurance. Counsel for the company claimed that the two occurrences were clearly accidents and that the deceased man had evidently so regarded them, since he received payment on account of them from an accident insurance company. He further contended that if the company had known that he was liable to fall it might have had some influence upon them in deciding whether to grant a policy upon the ordinary or any terms. The medical examiner to the company said that the two accidents mentioned above ought to have been disclosed to the company, because any tendency to fall indicated what might be a dangerous condition of the brain. Counsel for the plaintiff asked "Do you mean to say that if a man when in a theatre happens to sit upon a seat that is turned up or puts his foot upon a piece of banana skin that implies a dangerous condition of the brain?" The reply to this question having been in the affirmative, the Lord Chief Justice, who was trying the case,

said: "I must ask you to be careful and remember that you come here as an expert witness. If a man falls as a result of slipping upon a piece of banana skin, do you, as a medical man, say that indicates a dangerous condition of the brain?" To this inquiry the witness replied: "Taken in connexion with the sprained thumb I think it would." After evidence from Professor R. Saundby, who, whilst refusing to go so far as the last witness, was of opinion that the accidents should have been disclosed, the Lord Chief Justice in summing up said that a policy of insurance depended upon absolute good faith upon both sides. What the jury had to decide was whether the questions had been answered correctly by the deceased. In considering whether the two occurrences in question were accidents they should not pay much attention to the fact that the deceased described them as such to the accident insurance company, since he could not well have described them as anything else. If they thought that the information as to the injured knee and the sprained thumb was the sort of information that the questions submitted on the paper of application were intended to elicit, then they must come to the conclusion that they were incorrectly answered. The jury found that all the questions were correctly answered.

Health of the City.

The epidemic of diarrhœa which visits the city at this time of year has put in its appearance with the hot weather and an abundant fruit-supply. In the week ending July 23rd there were 27 deaths from diarrhœa, in the following week 76, and in the third week 98. This increased the death-rate to 23·3 per 1000. The zymotic death-rate rose in the same time from 8·5 to 10·8.

The Sewage of Hanley.

Dr. George Reid, medical officer of health of Staffordshire, has presented to the sanitary committee of his county council a report on certain experiments in connexion with sewage which have been going on at Hanley for the past two years. Works were constructed for treating one-sixth of the dry-weather flow of the sewage of Hanley on biological lines, the object being to determine by experiments on a large scale whether septic tank treatment followed by single filtration would yield satisfactory results with the sewage in question, and whether the process could be conducted on the site of the present outfall works, which is at no great distance from a populous part of the borough. For many years past, and at the present time, the method of disposal has been by chemical precipitation followed by land treatment. The land available, however, is very ill suited for the purpose and the area is altogether inadequate. It has become clear that the idea of continuing land treatment must be given up if the present outfall is to be retained. Mr. Scott-Moncrieff designed a piece of apparatus for the distribution of the tank effluent upon a circular filter, and Mr. Wilcox designed a mechanical distributor which was fixed in connexion with a rectangular filter. Both of these pieces of apparatus have been at work during the whole time that the experiments have been in progress. The area of the experimental filters amounts to half an acre, one quarter of an acre being given to each shape of filter. In both cases a depth of 4 feet 6 inches of filtering material was used. This material was broken "saggers," a waste material which is to be had in any quantity in North Staffordshire. The filters were divided into sections in each of which the particles were of different sizes and the effluent pipes were so fixed as to allow of samples being separately collected from each section. This was done with a view of ascertaining which size of particle was the best adapted for the purpose. The filters have now been in operation for some 18 months. A constant and regular flow of 200 gallons per superficial yard was obtained from the circular filter. The flow from the rectangular filter was not so large nor so constant. It varied from 130 to 200 gallons, the mean having been 162 gallons. After tabulating the results of the analyses of the sewage and of the effluents in respect of the various filters Dr. Reid proceeds to state that the conclusion to be drawn from the figures is that in every case the degree of purification which has been effected is excellent. The good quality of the work done exceeds that of any plant of which he has had any experience, neither did he know of any published records from similar works which would approach those of Hanley as regarded the degree of purification effected. Treatment in the "septic" tank effected a purification of 64 per cent. and 62 per cent. in the organic ammonia and oxygen absorbed respectively, whilst as regards the filter effluents these percentages varied from 94 per cent. and 91 per cent. in the case of the large grain section of the circular filter to 97 per cent. and 94 per cent. in the case of the finest grain section, the last-named figures being practically the same in the corresponding section of both filters. As regarded the degree of purification effected, the results were practically the same in corresponding sections of both filters. With reference to the routine working of the filters, with the exception of a temporary water-logging of the large grain section of the circular filter (1½ inches to ½ inch fragments), an occurrence which was corrected by a short period of rest, no trouble was experienced. In conclusion, Dr. Reid states that the working of the preliminary plant has exceeded his highest expectations, and he is of opinion that the Hanley corporation might with confidence proceed to lay down, on similar lines, a plant of sufficient capacity to deal with the whole of the sewage of the borough.

August 23rd.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Prevalence of Diarrhœa and its Causes; Discussion at the Health Committee; High Rate of Mortality.

AT the meeting of the health committee held on August 18th attention was drawn to the prevalence of diarrhœa and the high death-rate of the city for the past two weeks, which had reached 37·7 per 1000. Dr. E. W. Hope pointed out that, in regard to the causes of diarrhœa, it occurred at a certain season—namely, the season of decay, when food became rapidly putrescent. In turn in every town in the civilised world there was at that season an enormous destruction of infant life, but it was almost entirely confined to those whose mothers, from one cause or another, did not suckle the infants. Dr. Hope said that the returns from Birmingham, Aston, York, and other places also showed a high rate of mortality but the causes did not operate in every town at the same time. Many circumstances did not coincide to make the rate uniform every week. Unfortunately, for two weeks Liverpool had been at the top but other places followed closely with 36, 35, 32, &c., per 1000. The high death-rate had happened only for two weeks in Liverpool and he thought it was an encouraging thing that such a rate was so rare that it was seized upon now and made the subject of a great deal of conjecture. He was sorry to see a somewhat wrong impression created. The rate last year and right up to July of this year was about 19 per 1000, taking the whole period. They knew that they could not go on with such a low rate. The birth-rate in Liverpool was much higher than in the majority of places and thus they had a much larger infant and susceptible population. The high death-rate would probably continue for a week or two, possibly to the end of September. There was no royal or magic road to stop the disease. The proper course was to adopt Nature's methods; if her methods were set aside she would have her revenge. The supplying of sterilised milk, which had been copied from France, had given most promising results. Next to mother's milk it was the best food for infants, but the difficulty was that as there were thousands of mothers who could not suckle their children so there were thousands who would not give them sterilised milk. As regards the prevalence of scarlet fever and typhoid fever Liverpool occupied a relatively satisfactory position.

Beri-beri in Liverpool.

A Norwegian barque, the *Sunniva*, arrived in the Mersey on the morning of August 18th, from Cuba, with five cases of beri-beri on board. The patients are Norwegians. The sanitary authorities, taking the matter in hand, had four of the men placed in the tropical diseases ward of the Royal Southern Hospital, which possesses an admirable equipment for observing and dealing with such cases. Two of the men are suffering severely from the disease. Leaving Algoa Bay as early as March the vessel, with the sufferers on board, reached Santa Cruz, Cuba, in May. Thence they set out for the Mersey, which was reached, as stated, on August 18th.

Lancashire County Council; Registration of Midwives; University Grants.

The midwives committee of the Lancashire county council reported that certificates had now been granted to 457

midwives out of 524 who had applied. It was recommended that as the regulations were very stringent and so many of the women were illiterate a trained obstetric nurse should be appointed as inspector of midwives at a salary of £104 a year. The council has increased its grant of £500 to the University of Liverpool to £1000.

August 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

National Veterinary Association.

THE members of the National Veterinary Association opened their annual conference on August 15th in the lecture theatre of the Royal Dublin Society, where they were received by Mr. C. Uniacke Townshend, Vice-President, who welcomed them on behalf of the Royal Dublin Society. The President of the association, Mr. Clarke Allen, delivered an interesting address in which he alluded to the fact that since they last met in Dublin four years ago Professor Koch had startled the world by stating that tuberculosis of the lower animals was not the same as tuberculosis in man and that the one could not be transmitted to the other. The interim report of the commission which was appointed to investigate the question and of which a very distinguished Vice-President of their association, Professor D. J. Cunningham, was a member, did not support the view of the great German scientist. The members of the veterinary profession had good reason to doubt its truth and were aware of the loss of valued colleagues from tuberculosis with which they were accidentally inoculated while making post-mortem examinations.

Infantile Mortality in Dublin.

At the meeting of the public health committee held on August 16th the death-rate for the previous week was reported to be 28·1 per 1000 and of this large mortality no less than five deaths in every thousand were due to diarrhœa. Sir Charles Cameron said that he was issuing a circular setting out what precautions should be taken to reduce the mortality from this cause. Professor Antony Roche addressed a letter to the papers on August 18th in which he described the method adopted by the Liverpool sanitary authorities in connexion with the matter. Depôts were established throughout that city where parents could obtain pure milk for infants supplied in small separate bottles. As appeared in the last report of the Liverpool medical officer of health, this had the effect of diminishing the infantile death-rate from diarrhœa. The council of the Dublin Sanitary Association met on August 18th and called attention to the fact that diarrhœal diseases had caused deaths in this city during the previous four weeks numbering six, five, 15, and 33 respectively, and mentioned the well-established fact that when the subsoil temperature at a depth of four feet below the surface reaches 56° F. diarrhœic affections become prevalent each summer.

Small-pox in Dublin.

No new cases of small-pox have been reported in Dublin and the three patients in the isolatien hospital are convalescent. All the members of the Royal Irish Constabulary stationed at the Dublin depôt who have not been vaccinated within the last two years are now having that operation performed by order of the authorities.

The Belfast Board of Guardians.

The proceedings at the last meeting of the Belfast board of guardians tend to bring popular representative government into contempt, the "lively discussion," "general wrangling," "disorder," "interruptions," "uproarious scene of excitement," "uproar," and "low personal remarks," as reported in the daily papers of August 17th, being a disgrace to any body of individuals who are supposed to have charge of the poor. The whole farcical proceedings centred round the question of a proposed consumptive sanatorium, and it must be admitted that a letter from the Local Government Board in Dublin had the effect of making matters ridiculous at the outset of the meeting. As already reported in THE LANCET, two inspectors of the Local Government Board held a public inquiry some considerable time ago (in December, 1903) in reference to the suitability of a place known as the Abbey, in the neighbourhood of Belfast, which the guardians wished to acquire as a consumptive sanatorium. These inspectors have already reported and now the Local Government Board writes, after all the correspondence and the inquiry, that if the guardians are prepared, after full consideration, to place a definite scheme before it and if they are satisfied that the Abbey is the most suitable site for their purposes, the Board will be ready to give its decision on learning fully the guardians' views. Evidently the Local Government Board is unable to make up its mind on the question and wanted to know if the guardians were in the same state, and the discussion which ensued showed that the guardians are so divided in their views. The matter was finally referred to the infirmary committee. While an immense deal of public time was being wasted in unseemly discussion matters requiring serious attention were being neglected. As an example, a report from the works committee revealed a serious state of affairs in the children's infirmary, for Miss Ward, the lady superintendent, reported that "the patients in the children's infirmary are infested with vermin, and owing to the walls and woodwork it is impossible to keep the beds free from these pests. The beds in use are old and so constructed that insects get into crevices at the joints." The members of the works committee not only confirm these statements but say that during their inspection of this department they observed a loose board on the ground floor and on lifting it there was some sewage matter lying beneath it. When it is considered that this is the state of an institution over which the guardians who wrangle at length on personal matters are the responsible authorities it is little wonder that some people think that the Local Government Board should dissolve the Belfast board of guardians and appoint two or three paid officials to manage the workhouse.

Small-pox in the North of Ireland.

It is to be regretted that small-pox continues to spread throughout Ulster. At Monaghan attention was drawn at a meeting of the guardians on August 22nd to the part played by the professional tramp in spreading the disease, especially those coming from places like Armagh and Clones, where the epidemic is prevailing. If tramps were dealt with as the "work-shys" are treated in Switzerland the nuisance which is present all over Ireland would gradually cease. In Switzerland able-bodied vagrants are arrested and sent to a home of correction where they are forced to labour or to a farm where they must keep pace with the voluntary worker. There are 21 cases of small-pox in Armagh where there is not adequate accommodation in the view of the Local Government Board, which recommends that instead of cases being treated in the fever hospital (which is close to the infirmary) an additional shed should be erected to accommodate, say, 30 patients. The fever hospital should be cleared of the small-pox cases and thoroughly disinfected and reserved for other forms of fever. At present the enteric fever cases are being treated in the infirmary wards reserved for consumptives and there is no accommodation for the "contacts." The Newry guardians on Sept. 3rd are to consider how they will arrange to accommodate small-pox cases should the disease appear in their area. Enniskillen and Omagh are also making preparations.

Increase of Dispensary Medical Officers' Salaries.

The Banbridge board of guardians at its meeting on August 22nd decided to increase the salary of Dr. W. J. Cowden of Dromore from £80 to £110 per annum and that of Dr. J. Taylor of Tanderagee from £100 to £120 per annum. Dr. Cowden has had a service of five and Dr. Taylor of 25 years.

The Belfast Maternity Hospital.

The new Belfast Maternity Hospital, which will be of so much value to the medical school, is to be opened in November by the Countess Grosvenor, wife of the Chief Secretary for Ireland.

August 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The New Nursing School.

THE first school for sick nurses, which is open to all classes, has just been opened in Paris. The scheme was initiated by Madame Allegret, the head of the lycée for girls at Versailles, and Madame Alphen-Salvador. The school includes a hospital of 30 beds and as many private rooms. In consideration of a fee of 300 francs per annum, payable quarterly in advance and guaranteed by the relatives

of the pupils, the school takes such pupils completely under its charge, boards them, lodges them, and gives them full instruction both theoretical and practical. The practical instruction is given daily at the bedside of the patients in the hospital attached to the school and when the pupils are not on duty here they go from nine o'clock till 12 to the various hospitals in Paris so as to familiarise themselves with the nursing of all kinds of diseases. Lectures are given every day from five to six o'clock and include the subjects of anatomy, physiology, general and professional hygiene, minor surgery, massage, general medicine, diseases of children, the nursing of patients suffering from cutaneous diseases, the elements of pharmacy and professional etiquette (*devoirs*). The first year is a year of probation and if the pupil finds the work suits her she undergoes at the end of her first year an examination, after which she begins the second year of her studies and signs an agreement to serve the administration for four years. At the end of the second year she receives her diploma of assistant and from that moment begins the exercise of her profession. The school pays her 1200 francs per annum and this salary increases by 100 francs every three years, that is to say, at each renewal of the agreement. The school pays the salary whether the nurse is at work or not and when a nurse is sent to look after a patient in a private family the conditions of her stay are regulated by the work which she has to do and the administration receives the report of her work but she herself is prohibited from taking any fee. In return for this the school pays all the expenses of the pupils. If a pupil wishes to break her agreement during the three years to which it refers she must pay an indemnity which varies from 250 to 1000 francs. Uniform is a necessity. When attending on a patient the uniform is of pink cotton. When going about a town the uniform consists of a dark blue woollen dress with linen collar and cuffs.

Tobacco and the Sense of Hearing.

At the Congress of Otology at Bordeaux M. Delie read a paper upon Tobacco and the Auditory Sense. Tobacco, he said, exercises a direct and selective action upon the auditory nerve and nicotine brings about circulatory troubles, owing to its exciting action upon the great sympathetic. It also gives rise to, or stimulates, a trophoneurosis which ends in neuritis of the auditory nerve. Tobacco should be used in moderation and practitioners should warn patients in whom there is already auditory trouble that its action is specially harmful in their case. In persons who are already suffering from arterio-sclerosis or who have a family history of such a condition it ought to be forbidden, and all the more if they are comparatively young.

Should a Medical Man Recommend a Pharmaceutical Chemist?

The question has recently come up as to whether a medical man has the right to recommend a particular pharmaceutical chemist to his patients for making up prescriptions. The Tribunal of the Seine has already given judgment on this point and it is as well to recall the judgment now that the matter is being discussed afresh. The court declared that it is the business of the medical man to ascertain that the drugs which he orders are supplied in an active condition. If he knows that any particular pharmaceutical chemist sends out defective medicines he can—nay, should—recommend his patients to go to another pharmacy for their medicine. As this judgment did not please the particular pharmaceutical chemist to whom it referred the Court of Appeal was applied to and this court simply confirmed the judgment of the court below.

The Poison of the Bee.

At the meeting of the Academy of Sciences which was held on July 25th M. Phisalix read a paper giving the results of some researches which he had carried out upon the poison of the bee. He stated that sparrows form very delicate physiological tests for this poison. If a sparrow be stung in the pectoral region by two or three bees symptoms of poisoning supervene in five minutes at the latest. The earliest symptom is general and progressive weakening of motor power, the bird sinking down on its feet; if it tries to fly it almost immediately falls. The paresis gradually increases until all that the bird can do is to flutter along, scraping the ground, it oscillates, and its movements are incoördinate. Then follows a generalised and increasing tremor—in fact, a regular chorea (*danse de Saint Guidans*), in which the muscles of the feet, the head, the wings, and the eyes are all affected. Respiration gradually fails and the bird opens its beak as if gasping for breath. Intelligence is not affected and the bird will defend itself with both beak and claws, but towards the end the chorea is frequently interrupted by periods of somnolence. The paralysis increases and the bird dies in two or three hours from respiratory failure, though the heart goes on beating for some minutes after the respiration stops. Post-mortem examination shows that the blood in the heart is black and coagulates rapidly, while the area of the stings in the pectoral muscles is of a light yellow colour due to commencing mortification. If a solution of the venom be made it can be analysed physiologically and as inoculated by the bee it is found to contain three principles—one convulsive, one stupefying, and one which gives rise to acute inflammation (*phlogogène*). The existence in the poison of an insect of two poisons directly opposed to one another is a newly discovered fact which may be compared with the observations of M. Bouchard upon the poisons of urine.

X Rays and Constipation.

At the congress for the furthering of science which was held at Grenoble from August 4th to 11th M. Albert Weil read a paper upon the results of some observations which he had made as to the application of the x rays upon a limited area of the abdomen. He used as strong an application of the rays as the skin could support without injury and he found that when this treatment was repeated twice or thrice a week it had an action upon the intestines which allayed spasms and produced healthy motions in patients who had hitherto been unaffected by every kind of medication.

Obituary.

Dr. Dureau, the librarian of the Academy of Medicine, Chevalier of the Legion of Honour, died on August 12th, universally regretted.

August 23rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Serum Treatment of Puerperal Septicæmia.

AT a recent meeting of the Berlin Medical Society Professor Bumm read a paper on the Serum Treatment of Puerperal Septicæmia. He said that there was a difficulty in making a proper estimate of the action of the serum and that recoveries might be attributed to nature as well as to the serum treatment. He has used Marmorek's, Menzer's, and Aronson's serum, the result being as follows. Streptococcic puerperal peritonitis: five cases were treated by injections of great quantities of serum without success. Genuine septicæmia: in two cases the serum had not the least effect, one case in which great masses of streptococci were present in the blood recovered after three injections, while two cases complicated by endocarditis were not influenced. Pyæmia: no effect was produced by the serum. Streptococcic endometritis: of 35 cases five died, nine recovered without a manifest action of the serum, and in 21 the injection produced an immediate decrease of the temperature together with an improvement in the patient's general state. Although the advantages of serum treatment were very doubtful it was at least harmless and Dr. Bumm recommended that it should be tried in severe cases. In recent cases without general infection it should always be used. Prophylactic injections should also be given with a view to prevent cases from becoming septic.

The Waldschule of Charlottenburg.

According to an article published in the *Vossische Zeitung* a so-called "forest-school" (Waldschule) was opened on August 1st by the municipal authorities of Charlottenburg, a suburb of Berlin. This institution is a new departure in school hygiene. It was found long ago by school teachers that a good many children fell behind in the ordinary schools because they were anæmic, badly fed, and neurasthenic, although not suffering from any definite illness. In certain towns, Nauheim, for instance, special classes limited to a comparatively small number of pupils have been formed for such children and in these classes great attention is paid to hygienic measures such as bathing and to the reduction of school hours. Another plan was suggested some years ago by Professor Baginski, the well-known specialist for the

diseases of children; he advised the Berlin school authorities to establish "internats" in the neighbourhood of Berlin, where children suffering as above mentioned would live in the country, but his proposal was not adopted as it would have involved an enormous expense. The new system of the Charlottenburg Waldschule differs from that plan as the children and teachers stay there only during the day and return home in the evening, as is the case in the so-called Erholungsstätten for tuberculous children described in THE LANCET of May 30th, 1903, p. 1551. The Waldschule is situated in a pine forest and comprises a variety of buildings. There are pavilions for the kitchen and other domestic purposes, a large hall where the children remain in bad weather, departments for bathing and gymnastics, a playground, and last, but not least, a school pavilion. The staff consists of a nurse who sees that the children have proper food and exercises supervision, a principal and four teachers, and a visiting medical man. Only two and a half hours are allowed for daily lessons apart from the instruction in natural science, gymnastics, and singing which is given in the open air. The rest of the day is spent by the children in the playground and in the forest under the care of the teachers. 120 feeble and anæmic, but not distinctly sick, children have been selected out of the Charlottenburg municipal schools for the Waldschule by the school medical officers. The teachers and the children arrive early in the morning, are supplied with food by the school, and return home in the evening. This innovation in the school system is certainly a good one and deserves to be imitated in other places on a larger scale.

The late Professor Weigert.

Professor Carl Weigert, chief of the pathological institution of the Senkenberg Academy at Frankfort, and one of the leading pathologists of Germany, died in that city on August 4th. His first work had reference to the staining of animal tissues by aniline colours—a method devised by him which has now become one of the most important processes in microscopical and bacteriological research. His researches on the neuroglin, on necrosis by coagulation, and on the proliferation of cells caused by external irritants are cardinal points in pathological anatomy. His investigations on the subject of tuberculosis, though carried on previously to Professor Koch's great work, are by no means out of date. Professor Weigert was born in 1845 at Münsterberg (Silesia) and studied medicine at the Universities of Breslau, Berlin, and Vienna. On the completion of his medical curriculum he became an assistant to Professor Waldeyer at the Breslau Pathological Institution and at the Breslau Medical Clinic. When Professor Cohnheim, the celebrated pathologist and Professor Waldeyer's successor at Breslau, was called to Leipsic to become ordinary professor of pathology at that University, he only accepted this appointment on condition that Dr. Weigert should at the same time be appointed as his assistant. In 1879 Dr. Weigert was promoted to be extraordinary professor at Leipsic. In 1887 after the early death of Professor Cohnheim he was not appointed as his successor by the Saxon Government, although the Leipsic medical faculty was unanimously in his favour, and he therefore left Leipsic for Frankfort where he passed the remainder of his life as chief of the Senkenberg Pathological Institution.

August 23rd.

Medical News.

UNIVERSITY OF LONDON.—At the general intermediate examination in medicine for internal students held in July the following candidates were successful:—

Ella Mabel Barker, London (Royal Free Hospital) School of Medicine for Women; Charles Anthony Basker, Guy's Hospital; Harold Garfield Bennett, St. Thomas's Hospital; Sylvia Rose M. Blackstone and Mary Alice Blair, London (Royal Free Hospital) School of Medicine for Women; Harry Blakeway, Gerald Tyler Burke, and Thomas W. Higgins Burne, St. Bartholomew's Hospital; Angel Camacho, Charing Cross Hospital; Thomas E. Ashdown Carr, Guy's Hospital; Henry Joseph Cates, St. Bartholomew's Hospital; Herbert Stanley Chate, St. Mary's Hospital; Bertram Walter Cherrett, St. Bartholomew's Hospital; Arthur Beauchamp Coomber, St. George's Hospital; Herbert Rees Davies, London Hospital; Kenelm Hutchinson Digby, Guy's Hospital; Reginald Lionel Ernest Downer, St. Bartholomew's Hospital; Sheldon Francis Dudley, St. Thomas's Hospital; Robert Cecil Turle Evans, University College; Marmaduke Fawkes and Allan Bains Fearnley, St. Bartholomew's Hospital; †William Stephen Fenwick, Charing Cross Hospital; Janet Marcia Fiske, London (Royal Free Hospital) School of Medicine for Women; †‡Alexander Fleming, St. Mary's Hospital; Sidney Frank Fouracre, Charing Cross Hospital; Ernest William Giesen, Guy's Hospital; Sidney Wilfred Grimwade, St. Thomas's Hospital; Edith Mary Guest, London (Royal Free Hospital) School of Medicine for Women; John Hadwen, St. Bartholomew's Hospital; Eric Henry Rhys Harries, London Hospital; Henry John Henderson, Guy's Hospital; Tom Shadick Higgins, University College; John Ernest Hodson, Guy's Hospital; Hendrik Houwink, University College; Douglas Walter Hume, St. Bartholomew's Hospital; Mary Sophia Jevons and Elizabeth Herdman Lepper, London (Royal Free Hospital) School of Medicine for Women; Clifford Antony L. Mayer, Guy's Hospital; Marian Mayfield, Minnie Merrifield, and Ethel Mary Morgan, London (Royal Free Hospital) School of Medicine for Women; William Poole Henley Munden, Guy's Hospital; Frederic Miller Neild and *‡Henry John Nightingale, St. Thomas's Hospital; Humphrey Nockolds, University College; Edgar Lionel Robert Norton, Guy's Hospital; *†Charles Aubrey Pannett, St. Mary's Hospital; Walter Patey, St. Thomas's Hospital; Catherine Payne, London (Royal Free Hospital) School of Medicine for Women; August Frederick Perl, St. Bartholomew's Hospital; Arthur John Scott Pinchin, St. Thomas's Hospital; Edward John Price, University College; Mona Dew Roberts, London (Royal Free Hospital) School of Medicine; Richard Cadwaladr Roberts, London Hospital; Henry Charles Samuel, University College; William Octavius Sankey, St. Thomas's Hospital; Marie Simpson and Eliza Macdonald Smith, London (Royal Free Hospital) School of Medicine for Women; Henry Joste Smith and George French Stebbing, Guy's Hospital; Alfred K. B. R. W. Taylor, Charing Cross Hospital; Douglas Compton Taylor, University College; Alfred Charles Foster Turner, St. Thomas's Hospital; James Richard Henry Turton, St. Bartholomew's Hospital; Winifred Emmeline Watts, London (Royal Free Hospital) School of Medicine for Women; Harry Gordon Webb, St. George's Hospital; Leonard Henry Wootton, University College; and Carl Ernst Zundel, London Hospital.

* Distinguished in Anatomy. † Distinguished in Physiology.
‡ Distinguished in Pharmacology.

Special Examination in Organic Chemistry only.—Melville Mortimer Adams, Guy's Hospital; Edward William Archer and Henry Lewis Barker, St. Mary's Hospital; Frederick James F. Barrington, University College; Frederick Alfred Barter, London Hospital; Herbert Rowse Bastard, Guy's Hospital; Margaret Eliza Björkegren, London (Royal Free Hospital) School of Medicine for Women; William Francis Bowen, University College; George Spence Candy, London Hospital; Howard Bernard Carter, Guy's Hospital; Bernard Arthur Cheadle and James Aitken Clark, St. Thomas's Hospital; Joseph Harry Clarke, St. Mary's Hospital; Philip Crawford Conran, Middlesex Hospital; Ernest Neville Cook, University College; Aston Ridley Dale, Westminster Hospital; Davis Woodcock Daniels, St. Mary's Hospital; Newton Charles Davis, St. Bartholomew's Hospital; Allan Dewar, St. Thomas's Hospital; Eustace James Carey Dicks, St. Mary's Hospital; John Beatson Dunning and Raymond Chas. Viner Edsall, Guy's Hospital; Douglas Gordon Evans, London Hospital; Thomas Evans, Guy's Hospital; John Henry Farbstein, University College; William Vincent Field, London Hospital; Vera Foley, London (Royal Free Hospital) School of Medicine for Women; Norman Kessen Foster, University College; Claude Howard S. Frankau, St. George's Hospital; Harold Sydney Furness, University College; Eric Leigh Fyffe, St. Thomas's Hospital; Alfred Linton Gardiner, Guy's Hospital; Seymour Richard Gleed, St. Thomas's Hospital; Alexander Edward Gow, St. Bartholomew's Hospital; Ethel Margaret Eades Hall, London (Royal Free Hospital) School of Medicine for Women; Thomas John Hallinan, Charing Cross Hospital; Herbert Hawker, University College; Camilla Lucy Heckrath, London (Royal Free Hospital) School of Medicine for Women; Frederick George Hitch, London Hospital; Frank Norman S. Hitchcock, St. Thomas's Hospital; Kenneth Hill Hole, Guy's Hospital; Charles Reginald Hoskyn, St. Bartholomew's Hospital; Habibmia I. Janmahomed and William Johnson, Guy's Hospital; John Edward Lionel Johnston, St. Mary's Hospital; Alexander John Kendrew, St. Bartholomew's Hospital; Edgar Hartley Kettle, St. Mary's Hospital; Mirza Mohammed Khan and Alfred John Lee, University College; Edward Leslie Martyn Lobb, Guy's Hospital; Dermot Loughlin, London Hospital; Herbert Cubitt Lucey, Guy's Hospital; Donald Macrae, London Hospital; Claude Herbert Marshall and Bryen McDermott, Guy's Hospital; Oswald William McSheehy, St. Thomas's Hospital; Howard Edward H. Mitchell, Guy's Hospital; Max H. Edward R. Monteseln, St. Thomas's Hospital; Mark Alleyne Nicholson, London Hospital; Ernest Edwin Tallent Nuthall, St. Thomas's Hospital; Geoffrey Eugene Oates, St. Mary's Hospital; Harry Percival Orchard, London Hospital; John George Owen, University College; Walter Henry Palmer, London Hospital; Owen Brynog Parry, St. Mary's Hospital; Mary Elizabeth Parsons, London (Royal Free Hospital) School of Medicine for Women; Eustace M. Parsons-Smith, St. Thomas's Hospital; Norman Prescott, Joseph Francis E. Prideaux, and Thomas Edwin Pryce, University College; Frederick Whitly Quirk, St. Mary's Hospital; Simon Isaac Rabbinowitz, London Hospital; Jeffrey Ramsay, St. Bartholomew's Hospital; Roger Aiken Rankine and Douglas Reynolds, Guy's Hospital; Rowland Waters Rix and Hubert Alan Hirst Robson, St. Thomas's Hospital; Mabel Russell, London (Royal Free Hospital) School of Medicine for Women; Harry Archibald Sanford, Guy's Hospital; Charles Fox Octavius Sankey, St. Thomas's Hospital; Harold Willis Scawin, St. Bartholomew's Hospital; Frederick George Sergeant, University College; Philip Seymour-Price, Guy's Hospital; Frederic Carney Shone, University College; Florence Stacey, London (Royal Free Hospital) School of Medicine for Women; Thomas Stansfield, Guy's Hospital; Kenneth Henry Stokes, University College; Robert Yelverton Stones, London Hospital; Ethelbert William Squire and Arthur Arbuthnot Straton, St. Mary's Hospital; John Jerome Suckling, University College; Stanley George Tracy and Vincent Townrow, Guy's Hospital; Geoffrey Viner, St. Bartholomew's Hospital; Charles Wilfred Vining, St. Mary's Hospital; Dora Muriel Watney and Lilian Enid Watney, London (Royal Free Hospital) School of Medicine for Women; Charles Henry Shorney Webb, Middlesex Hospital; Henry Owen West, King's College; Herbert George Willis, St. Mary's Hospital;

William Wallace Wood, London Hospital; Edward Musgrave Woodman, St. Bartholomew's Hospital; and Harold Addison Woodruff, Birkbeck College.

At the intermediate examination in medicine for external students held in July the following candidates were successful:—

Laurence Ball, University of Birmingham; Sydney Herbert Booth, University of Leeds; Ernest Frederick Finch, University College, Sheffield; Robert Applegarth Hendry, University of Liverpool; James Ernest Middlemiss, University of Leeds; Edward Selby Phipson, University of Birmingham; Harry Richardson Rawlings, University of Leeds; Arthur Toulmin, Victoria University; Arthur Henry Turner, University of Leeds; and Joseph W. James Willcox, University College, Bristol.

Special Examination in Organic Chemistry only.—Kathleen Baylis, University College, Cardiff; Maud Bennett, London (Royal Free Hospital) School of Medicine for Women; Alfred Bernstein, Victoria University; Edward Wrigley Braithwaite, University of Leeds; John Webster Bride, Victoria University; Bertie Isaac Cohen, St. George's Hospital; Stanley William R. Colyer, Charing Cross Hospital; Charles Harley Crombie, private study; Elkin Percy Cumberbatch, University of Oxford; Arthur Davies, Westminster Hospital; Trevor Berwyn Davies, University College, Cardiff; Canut Deuntzer, Middlesex Hospital; Donald Frederick Dobson, University of Leeds; Josiah Rowland B. Dobson, University College, Cardiff; Maurice Rowland Dobson, University of Leeds; Evan Parry Evans, University College, Cardiff; Frederick Pearson Fisher, University of Birmingham; Arthur Fothergill, University of Leeds; George Blenkhorn Harland, Guy's Hospital and University of Durham; Clement H. Heppenstall, University of Leeds; Howell Tyiford Howells, University College, Cardiff; Robert Henry Hatten Jolly, Charing Cross Hospital; Arthur Rocyn Jones and Evan J. Goronwy Jones, University College, Cardiff; Hugh Braund Kent, Northern and South-Western Polytechnics; John Lewis, University College, Cardiff; William Ernest Lord, University of Leeds; Theodore Henry Mason, St. Bartholomew's Hospital; Constance A. Mortlock-Brown, London (Royal Free Hospital) School of Medicine for Women; Vincent Moxey, King's College and University College, Bristol; Edward H. Allon Pask, University College, Sheffield; Alfred Alex. Webster Petrie, University of Edinburgh and Edinburgh Medical School; William Joseph Petty, Dan Arthur Powell, and Laura Gertrude Powell, University College, Cardiff; Percy John Probyn, Charing Cross Hospital; Albert Edward Quine, Victoria University; David Ranken, University of Durham; Alfred Richardson, University of Leeds; Arthur M. Marsh Roberts, University of Liverpool; Kenneth Robinson, Victoria University; Harry Dudley Rollinson, University of Birmingham; Arthur Denys Rope, Middlesex Hospital; Norman Guy H. Salmon, Charing Cross Hospital; Alice E. Sanderson, B.Sc., London (Royal Free Hospital) School of Medicine for Women; Frank Sholl Scott, and Latimer James Short, University College, Bristol; George F. Rawdon Smith, University of Liverpool; Horace Elliot Rose Stephens, Victoria University; Gravenor Robert Strong, Westminster Hospital; John Thompson, Victoria University; Arthur Tilly, Middlesex Hospital; Cuthbert Ferguson Walker, Queen's Colleges, Galway and Belfast; Alwyn Wharton and Edgar Wharton, Victoria University; Harold Arthur Whitcombe, University of Birmingham; and Henry Whitehead, Victoria University.

This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At the examinations held in August the following candidates passed in the subjects indicated:—

Surgery.—R. H. Cooper (Section II.), Charing Cross Hospital; A. W. S. De Vine (Sections I. and II.), Birmingham; E. F. W. Hoare (Sections I. and II.), Liverpool; A. C. Story (Sections I. and II.), St. Mary's Hospital; and R. H. Terry (Section I.), Guy's Hospital.

Medicine.—G. B. Messenger (Section I.), Westminster Hospital; C. S. Scott (Section II.), St. Bartholomew's Hospital; I. C. Thorburn (Sections I. and II.), Liverpool; A. B. S. Todd (Section II.), Leeds; and S. H. R. Welch (Sections I. and II.), Charing Cross Hospital.

Forensic Medicine.—C. W. S. Boggs, Leeds; E. F. W. Hoare, Liverpool; J. E. Jones, Bristol; I. C. Thorburn, Liverpool; and H. M. Waller, St. Bartholomew's Hospital.

Midwifery.—W. G. H. Cable, London Hospital; and W. R. Elliott, Cambridge and St. Thomas's Hospital.

The diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery: R. H. Cooper, A. C. Story, A. B. S. Todd, and S. H. R. Welch.

UNIVERSITY OF OXFORD.—The following degrees in medicine were conferred during the summer term:—

Doctors of Medicine.—Thomas E. C. Cole, Christ Church; Edgar W. Willett, New College; William A. P. Waters, Brasenose College; Gustav J. Schorstein, Christ Church; and Arthur E. Boycott and John D. Rolleston, Brasenose College.

Bachelors of Medicine and Surgery.—W. B. Billinghurst, St. John's College; A. C. Inman, Wadham College; A. F. Hertz, Magdalen College; A. E. A. Loosely, Pembroke College; J. H. Thomas, Trinity College; R. D. MacGregor, Exeter College; and P. A. Mansfield, Keble College.

Degree days are announced as follows for the coming term: Thursday, Oct. 20th; Thursday, Nov. 10th; and Saturday, Dec. 17th. Examinations for scholarships offered in natural science will be held on Dec. 6th at Balliol College, Christ Church, and Trinity College; on Dec. 13th at Lincoln and Magdalen Colleges; on Jan. 17th, 1905, at Jesus College; and on March 14th, 1905, at Keble College.

BIDEFORD DISPENSARY AND INFIRMARY.—The annual house-to-house collection of 1904 for the Bideford Dispensary has just been made, with the result that over £100 has been added to the funds of the institution.

ROENTGEN RAYS FOR MOSCOW.—The Moscow town council has ordered a Roentgen-ray cabinet at a cost of £150, inclusive of dynamo, for the use of the hospital sent by the town to the Far East. This apparatus will be under the control of the manager of the hospital, and if it proves to be satisfactory more will be ordered both for the hospitals in the town and the one in the Far East.

THE STILLBORN OF WARSAW.—In the suburbs of Warsaw, says the *Novoe Vremya*, the percentage to the births of stillborn children is 15. This excessive infant mortality is mostly due to the want of accoucheurs whose place has to be filled with self-styled nurses. In the suburb of Volya alone the number of stillborn children in ten years has been over 500.

THE LATE DR. JOHN SUTHERLAND.—Dr. John Sutherland of Netherfield, Nottingham, died on July 24th, in his forty-fifth year, after a very short illness. He was a native of Airth, a village in Stirlingshire, and his medical education was obtained at Edinburgh University where he graduated as M.B. in 1891. About 11 years ago he went to Netherfield, practised in partnership with Mr. J. T. Knight of Carlton-Gedling, and soon had many patients. Dr. Sutherland was a man of a good presence, rather over the average stature, and prepossessing in his manner; he was everywhere very popular and by his patients he was deservedly esteemed. The funeral, which took place at Carlton cemetery on July 26th, was very largely attended.

A HOSPITAL CURIOSITY.—On April 28th, 1903, a house-breaking firm made a unique discovery under the foundation stone of the old Royal Waterloo Hospital for Children, which they were razing to the ground. The foreman on removing a large piece of Portland stone, on which there was no inscription, discovered a glass tablet with the names of the founders, dates, and other details. There were also a small copper coin and a copy of the annual report of the hospital for the year 1822, contained in a bottle, and all in an excellent state of preservation. Among the patrons and vice-patrons were the following interesting names: The Duchesses of Kent, Northumberland, and Princess Augusta; the Dukes of York, Sussex, Grafton, Rutland, Beaufort, and others; Sir Robert Peel, Sir Humphry Davy, and other well-known people.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The following gentlemen have been elected as officers and members of council for 1904–05:—President: Mr. C. M. Tuke. Vice-Presidents: Mr. C. R. B. Keetley, Mr. W. P. Barrett, Dr. G. H. D. Robinson, Mr. J. R. Lunn, Dr. E. Furniss Potter, Mr. E. Bromet, Dr. G. P. Shuter, and Mr. H. Webb. Council: Mr. R. Pollock, Dr. A. M. Ross Sinclair, Mr. G. A. Garry Simpson, Mr. H. Percy Dunn, Mr. W. McAdam Eccles, Dr. E. P. Paton, Dr. E. A. Saunders, Dr. A. J. Rice Oxley, Dr. J. A. Mansell Moullin, Dr. A. Morison, Dr. A. E. Russell, and Dr. C. Buttar. Treasurer: Mr. T. Gunton Alderton. Secretaries: Dr. Andrew Elliot and Dr. W. H. Walter. Librarian: Mr. H. W. Chambers. Editor of Journal: Dr. Leonard C. T. Dobson. Editorial secretary: Mr. J. G. Pardoe.

ERRATUM.—In the list of the examination results of the University of Liverpool in THE LANCET of August 13th the name "D. T. Parry" given as having obtained the Diploma in Public Health should read *D. T. Barry*.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

Railway and other Accidents with Relation to Injury and Disease of the Nervous System. A Book for Court Use. By Allan McLane Hamilton, M.D., F.R.S.E., late Clinical Professor of Mental Disease in Cornell Medical College. Price not stated.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Beri-Beri: its Symptoms and Symptomatic Treatment. An Essay printed by the Board of Trinity College, Dublin, for the Author. By Percy Netterville Gerrard, B.A., B.Ch., B.A.O., M.D. Dublin University. Price 2s. 6d. net.

Beri-Beri: its Symptoms and Symptomatic Treatment. Being Extracts from "An Essay on Beri-Beri," printed by the Board of Trinity College, Dublin, for the Author. By Percy Netterville Gerrard, B.A., B.Ch., B.A.O., M.D. Dublin University. Price 1s. 6d. net.

Diet and Food considered in Relation to Strength and Power of Endurance, Training, and Athletics. By Alexander Haig, M.A., M.D. Oxon., F.R.C.P., Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women. Fifth edition. Price 2s. net.

FISCHER, GUSTAV, Jena.

Ueber die körperlichen Aeusserungen psychischer Zustände. Weitere experimentelle Beitrage zur Lehre von der Blutzirkulation in der Schädelhöhle des Menschen. Von Dr. Hans Berger, Privatdozent der Psychiatrie an der Universität Jena. Preis für Text und Atlas, M.20.

Klinisches Jahrbuch. Herausgegeben von Prof. Dr. F. v. Eiselsberg, Prof. Dr. Flügge, Prof. Dr. F. v. Mering und Prof. Dr. Werth. Zwölfter Band. Viertes Heft, preis M.4.50. Fünftes Heft, preis M.2.50.

LOCKWOOD, CROSBY, AND SON, 7, Stationers' Hall-court, Ludgate-hill, E.C.

The Purification of Sewage. Being a Brief Account of the Scientific Principles of Sewage Purification and their Practical Application. By Sidney Barwise, M.D. Lond., B.Sc., M.R.C.S., D.P.H. Camb., Fellow of the Sanitary Institute, Medical Officer of Health to the Derbyshire County Council. Second edition, revised and enlarged, with an Appendix on the Analysis of Sewage and Sewage Effluents. Price 10s. 6d. net.

MACMILLAN AND CO., Limited, London.

The Story of an East London Hospital. Price 2s. 6d. net.

MURRAY, JOHN, 50A, Albemarle-street, W.

A Primer of Physiology. By E. H. Starling, F.R.S. Price 1s.

The Recent Development of Physical Science. By William Cecil Dampier Whetham, M.A., F.R.S., Fellow of Trinity College, Cambridge. Price 7s. 6d. net.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Specificity of Anti-venomous Sera. (Second communication.) By Captain Geo. Lamb, M.D. Glasg., Indian Medical Service. New Series. No. 10. Price As. 8 or 9d.

RABBINOWICZ, E. W., 48, Commercial-street, Aldgate, E.

The Surgery of Ritual Circumcision. By Jacob Snowman, M.D., M.R.C.S., M.R.C.P. Lond., Medical Officer of the Initiation Society, &c. Published under the auspices of the Medical Board of the Initiation Society. Price 2s. 6d.

VOGEL, F. C. W., Leipzig.

Die Tuberkulose, ihre Aetiologie, Prophylaxis und Therapie. Nach klinischen Erfahrungen und Versuchen dargestellt von Dr. J. Goldschmidt. Price M.3.

Erfolge einer Einmaligen Kur in Karlsbad beim Gallensteinleiden. Eine Studie aus dem Jahr 1903. Von Dr. Franz Fink, Primarius des Allgemeinen Krankenhauses in Karlsbad. Price M.3.

WALKER, JOHN, AND CO., Limited, Farringdon House, Warwick-lane, E.C.

Great Britain's Colonial and Indian Possessions. A Handy Reference Guide to the British Empire. Price 1s.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CHAPMAN, JOHN E., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for North Molton, Twitchen, and Molland by the South Molton (Devon) Board of Guardians.

GREENE, ARNOLD J., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Medical Officer to the Royal Albert Edward Infirmary, Wigan.

JACKSON, F. W., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Act for the Market Rasen District of the county of Lincoln.

KERR, W. S., M.B., C.M., F.R.C.S. Edin., had been appointed Surgeon to the Ear and Throat Department, Sheffield Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and laundress.

BERKSHIRE COUNTY COUNCIL.—Medical Officer of Health. Retaining fee of 50 guineas a year and additional fees.

BOOTLE (LIVERPOOL) GENERAL HOSPITAL.—Junior Resident. Salary £80 per annum, with board and laundry.

BRADFORD POOR-LAW UNION SANATORIUM FOR CONSUMPTIVES, Eastby, near Skipton.—Resident Medical Officer. Salary £100, with rations, apartments, and washing.

CARDIFF INFIRMARY.—Assistant House Physician for six months, renewable. Salary at rate of £75 per annum, with board, washing, and apartments.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, attendance, and washing.

CARLISLE, CUMBERLAND INFIRMARY.—Resident Medical Officer as House Physician and House Surgeon for six months each. Salary at rate of £80 and £100 per annum respectively, with board, lodging, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments (not board).

CHELTENHAM GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £92 per annum, with board, lodging, and washing.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, board, washing, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Honorarium £25, with board, residence, &c.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £75, with apartments and board.

GREAT YARMOUTH HOSPITAL.—House Surgeon. Salary £90 per annum, with board, lodging, and washing.

HAMPSTEAD GENERAL HOSPITAL.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with rooms, coals, and gas.

LIMPLEY STOKE, NEAR BATH, OPEN-AIR SANATORIUM FOR CONSUMPTIVES.—Resident Medical Officer. Salary £200 per annum, rising to £300.

LIVERPOOL INFIRMARY FOR CHILDREN.—Assistant House Surgeon for six months. Salary £30, with board and lodging.

LIVERPOOL STANLEY HOSPITAL.—Third House Surgeon. Salary £70 per annum, with board, residence, andwashing.

LONDON HOSPITAL, Whitechapel, E.—Physician.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Honorarium at rate of 50 guineas per annum, with board and residence.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

NEWCASTLE-ON-TYNE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary £100, with board, lodging, and laundry.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum, with rooms, commons, and washing.

ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, Devonport.—Assistant House Surgeon for six months. Salary at rate of £90 per annum, with board, lodging, and washing.

ROYAL EAR HOSPITAL, Dean-street, Soho.—Two Assistant Surgeons.

SALFORD ROYAL HOSPITAL.—Junior House Surgeon for six months. Salary £70 per annum, with board and residence.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent-garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £40 per annum, with board, washing, and residence.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Assistant House Surgeon for six months. Honorarium of at least £25, with board, apartments, and washing.

WANDSWORTH UNION.—District Medical Officer. Salary £100 per annum, with fees.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon Salary £50 per annum. with board, lodgings, washing, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—One House Physician and three House Surgeons, for six months. Board, lodging, and laundry provided.

ZANZIBAR GOVERNMENT.—Medical Officer for the Island of Pemba. Salary £360 per annum.

Births, Marriages, and Deaths.

BIRTHS.

DEAN.—On August 21st, at Harley-street, London, W., the wife of Henry Percy Dean, M.S., F.R.C.S., of a daughter.

RYAN.—On August 19th, at "St. Moritz," Carshalton-lane, Coulsdon, Surrey, the wife of Victor F. Krenig-Ryan, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

SAMBON.—On August 15th, at Heathfield-park, Willesden Green, N.W., the wife of Louis W. Sambon, M.D., of a daughter.

MARRIAGES.

CLAYTON—MALLETT.—On August 16th, at Emmanuel Church, West Hampstead, by the Rev. M. M. Vischer, B.A., John Cecil Clayton, L.R.C.P., M.R.C.S., only son of Major C. C. Clayton, late 34th Regiment, to Caroline Alice, youngest daughter of the late Alfred Edgar Mallett, of Leighton-road, N.W.

HATRICK—CAMERON.—On August 17th, at Grove-park Church, Chiswick, Charles Dainty Hatrick, M.D., second son of James L. Hatrick, to Jessie, eldest daughter of Peter Cameron, of Balchaney, Pitlochry.

DEATH.

M'EWAN.—On August 21st, at Bedford, Dugald M'Ewan, Inspector-General, M.D., R.N., Honorary Physician to the King.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SLUM DWELLINGS AND SANITATION.

As a rule the slum-property owner who leaves his premises in an insanitary condition deserves no mercy, but we have always been willing to allow that in some instances his desire to do right is annulled by the conduct of his tenants. For instance, if water-closets are put in they are made filthy by the habits of the tenants. They are used as sinks and as receptacles for all sorts of waste and consequently get blocked. Dr. John Robertson, the medical officer of health of the city of Birmingham, in his report for the second quarter of the current year, has an interesting little note upon this question as it arises in Birmingham. The following are the arrangements that were made and we congratulate Dr. Robertson and his staff upon the work which they have done and the good results which they have obtained. The report says:—

"One alteration made during the quarter consisted in detailing two of the court cleansers to go round and inspect the water-closets in the poorer districts with a view to getting the tenants to keep them clean, free from blockage, and with the doors locked. Distinctly good results have already been obtained from this frequent inspection, and it is hoped that in this way it will be possible to educate the lower classes to do their part in looking after the closets which have been provided for them at a considerable expense by the owners of the property.

The following figures give some idea of the work done by these two men during the quarter.

Number of water-closets visited	27,545
,, found with doors unlocked	13,890
,, found with dirty floors	1370
,, found with dirty seats	1129
,, found with dirty basins	5857
,, found defective	413
,, found choked	1082

In each case where the closet was found to be dirty the persons using it were asked to put it in order, and in most cases this was sufficient. Where, however, the closets were frequently found in a filthy condition notices have been served, and legal proceedings will be taken if necessary."

CLOTHES AND PHYSICAL DEGENERATION.

A CORRESPONDENT signing himself "S. H. C." has written to the *Daily Chronicle* on August 17th concerning the above subject. He states that whilst the masculine physique is deteriorating the female figure is growing taller and better developed. In his opinion there is a certain well-definet reason for this difference which is receiving little if any attention. During the last 25 years he has observed some 7000 children in our elementary schools, and this observation has led him to the conviction that the matter of clothing needs special investigation. Girls, he says, are clothed in loose garments which are frequently washed. Boys, on the contrary, are dressed in tight-fitting cloth or serge garments, and these in most cases are never cleaned from the time when first made until the day when they literally drop off. He considers that if it were made compulsory that boys should be dressed in loose, clean clothes we should probably hear less about the degeneration of the race. We think that "S. H. C." has put forward a theory which is to some extent plausible. The accepted reason why the women of the last 20 years or so have grown taller than their mothers is that they lead different lives, but neither the fact nor its explanation is free from doubt. With regard, however, to the clothing of school-boys there can be no doubt that the school-boy of the lower and even of the lower middle classes wears clothes which certainly in many cases are anything but clean. Anyone who has had anything to do with boys' schools knows the peculiar smell of unwashed cloth clothes. It is probable, too, that in the case of the humbler classes of society the cloth of which their clothing is made is, to begin with, manufactured from shoddy, a material of which the components have seen their best days long before they start on their new career as cheap cloth. All this is true, and such clothing compares from a sanitary point of view badly with the often washed prints worn by girls; but we doubt if "S. H. C." has really furnished a cause of stunted growth.

ACCOMMODATION FOR RUSSIAN INSANE.

THE *Novoe Vremya* observes that the protection of the insane in St. Petersburg is of a deplorable character. All special asylums are full up, whilst it cannot be hoped that the request of the council to have district asylums built at Government expense will be settled soon, though application has been made in that sense. But the city infirmary committee have intrusted the chief medical men of the city infirmaries to work out the question of the improvement of the accommodation for the insane in the capital, as well as the installation of special infirmaries for dipsomaniacs. The urgency of this question is substantiated by an article that appeared in the *Novosti* some time ago headed "People in Chains," in which the writer stated, inter alia, that there were about 1500 insane in the Province of St. Petersburg and that for want of public arrangements for their care they are at the charges of their friends who care for them in numerous cases under most cruel conditions, some 400 being kept in chains by their relatives in huts, and some of them, the very violent, have to be caged off. He states that the chained condition of many has lasted from 10 to 15 years. Numbers have lost the power of speech and can simply howl and grind their teeth, while they lie on the ground like wild animals. The writer opens his article with the observation that "It is strange, but true, that in the large and wealthy government of St. Petersburg there is not even one infirmary for the diseased in mind."

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Will any of your readers kindly recommend me a home or institution where a patient of mine (a boy, aged 14 years) can be placed? He is feeble-minded but can read and write and is capable of being trained; is obedient but requires discipline. Roman Catholic home, London or south coast, preferred. Terms must be moderate.

I am, Sirs, yours faithfully,

E. T. CROUCH, M.R.C.S. Eng., &c.

Stoke House, Gosport, Hants, August 21st, 1904.

THE APPEAL ON BEHALF OF MISS E. B. PELLATT, L.S.A.

THE treasurer, Surgeon-Colonel F. H. Welch, 8, Brandram-road, Lee, Blackheath, S.E., begs to acknowledge the receipt of the following sums, additional to those already reported:—

	£	s.	d.
Miss M. E. Ekin	0	5	0
Mrs. R. Wilmot	0	10	0
E. A. A.	1	1	0
M. A.	1	1	0
Miss M. E. Lake	1	0	0
Miss F. E. Cassan	5	0	0
Methodist Doctor	2	2	0
Mr. C. E. Phipps	1	1	0
Miss Jacomb	0	10	0
Miss G. Beattie	0	10	0
Miss E. Garland	0	10	0
Provost Ball	1	1	0
Miss H. Iremonger ...	2	2	0
Miss A. C. Jervoise ...	3	3	0
Miss Cope	0	5	0
Miss M. Moriaty	1	0	0
Dr. J. M. Macdonald ...	10	0	0
M. S.	0	10	0
Mrs. Crenghe-Haward ...	1	0	0
Mrs. H. L. Lancaster ...	2	2	0
Dr. O. Codrington	5	5	0
Sidesman, St. Barnabas .	0	5	0
L. T. T.	0	3	6
M. E. D.	5	0	0
Miss Lillington	1	0	0
Miss F. F. Kelaart	0	10	0
Miss W. M. Dod	1	1	0
Misses Slee	0	15	0
A Thankoffering	1	0	0
Rose E. Hope	2	2	0
A Well Wisher	0	10	0
Miss Martin	2	2	0
Dr. J. J. Nason	1	1	0
E. M. J.	0	6	6
Mr. R. Braithwaite ...	1	1	6
Miss M. Goodal	1	5	0
E. Wood	0	2	6
G. L.	0	10	0
Miss L. Newton	1	0	0
Rev. H. R. Manders ...	1	0	0
Miss M. Gill	1	0	0
Dr. P. Jakins	1	1	0
Dr. C. R. Fleury	1	1	0
Dr. and Mrs. Coleman	1	1	0
Mr. F. B. Palmer	5	5	0
Mr. E. S. Frost	0	10	6
Rev. G. Greenwood	5	5	0
The Blind Child of a Country Parson ...	0	5	0

SCHOOLS FOR FEEBLE-MINDED CHILDREN.

To the Editors of THE LANCET.

SIRS,—I shall be much obliged if any of your readers will give me the address of a good school to which to send a feeble-minded girl, nine years of age. The parents are able to pay a fair fee—say up to £80 a year—and would prefer a school within easy reach from Llandudno.

I am, Sirs, yours faithfully,

EDWARD GOODDY.

Glenthorne, Trinity-square, Llandudno, August 19th, 1904.

MORE ALLEGED ABORTIONISTS.

AT Marylebone police-court on August 27th Sarah Elizabeth Allen, of Dornfeld-street, West Hampstead, was charged on remand with performing an illegal operation upon a young woman, and Ellen Stoneman, of Chesterton-road, North Kensington, was charged with aiding and abetting her in committing the offence. Mr. Plowden committed the prisoners for trial.

In suspense.—No medical man is "obliged by law" to attend any case to which he may be summoned unless the patient is under his care in his capacity as medical officer to a hospital, workhouse infirmary, or other institution, or unless he be a naval or military medical officer on duty, or a police surgeon, or other paid medical officer. His obligation then arises out of his undertaking to perform the duties of a post which he has accepted and in which such duties are naturally involved. The obligation of a medical man in ordinary practice to attend his patients arises out of a contract to do so which may be express or implied and for the breach of which he is liable, as they are liable to pay him for his attendance. Whether his putting off his attendance to suit his convenience would be a breach of his duty must obviously depend upon circumstances. The General Medical Council may remove from the Register the name of a medical practitioner whom it may adjudge to have been guilty of infamous conduct in any professional respect. The question whether his conduct has been such is a matter of fact which the Council decides according to the evidence in the particular case before it.

H. A.—The answer to our correspondent's question depends entirely on the terms of the contract between the parties and his best course is to consult his legal advisers. As there are proceedings pending he could, if he has a right to them, probably take some steps in the existing action for the purpose of obtaining either delivery over of the books or their inspection.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Aug. 25th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 19	29·92	W.	...	110	67	53	54	60	Cloudy
,, 20	30·05	N.E.	...	106	67	53	53	56	Cloudy
,, 21	30·01	N.	...	94	66	52	56	58	Cloudy
,, 22	29·79	S.	0·13	96	65	56	57	59	Overcast
,, 23	29·89	N.E.	0·35	105	65	54	55	59	Cloudy
,, 24	30·05	N.	0·01	108	63	50	51	55	Fine
,, 25	30·16	N.	...	96	64	49	51	54	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (31st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (3rd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (29th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3 P.M. Mr. Paget: Demonstration in Surgical Wards.

TUESDAY (30th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: X Ray Treatment and Diagnosis (with lantern slides).

WEDNESDAY (31st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—4.15 P.M. Dr. Russell: Demonstration in Medical Wards.

THURSDAY (1st).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Middle Ear Suppuration (with lantern slides).

FRIDAY (2nd).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Abrahams: Skin Cases.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1904, which was completed with the issue of June 25th, and the Title-page to the Volume, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1904 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

Communications, Letters, &c., have been received from—

A.—Miss I. Allen, Bath; A. A. B.; Anglo-American and Continental Pharmaceutical Co., Croydon; Messrs. Armour and Co., Lond.; Aerators, Ltd., Secretary of.

B.—Dr. W. Blair Bell, Aigburth; Mr. D. Brown, Newport, Mon.; Messrs. J. Beal and Son, Brighton; Bootle Borough Hospital, Secretary of; Bedford County Hospital, Secretary of; Messrs. Bates, Hendy, and Co., Lond.; T. B. Browne, Ltd., Lond.; Dr. W. Berry, Wigan; Dr. Clement Belcher, Birmingham; Messrs. Baillière, Tindall, and Cox, Lond.; Mr. W. G. Black, Edinburgh; Dr. C. R. Box, Lond.; Mr. C. L. Bedford, Lond.; Dr. J. Beard, Edinburgh; Messrs. Bell and Bradfute, Edinburgh.

C.—Dr. George Carpenter, Lond.; Mr. E. F. Cooper, Ardington; Cardiff Infirmary, Secretary of; Dr. A. Collie, Quiberon; Cumberland Infirmary, Carlisle, Secretary of; Mr. J. Cantlie, Lond.; Mr. G. H. Colt, Seaton; Messrs. T. Christy and Co., Lond.; Messrs. Carnrick and Co., Lond.; Dr. C. Campbell - Horsfall, Clevedon; Mr. C. Cooper, Lond.; Messrs. J. and J. Cash, Coventry; Dr. Myer Coplans, Stroud.

D.—Messrs. Down Bros., Lond.; Duryea Co., Coventry; Messrs. Davis and Ornstien, Lond.; Down District Lunatic Asylum, Downpatrick; Messrs. G. L. Daube and Co., Frankfurt; Mr. J. F. D'Mello, Rangoon.

E.—E. N.

F.—Dr. A. O. M. Fehrsen, Birmingham; Dr. John S. Fairbairn, Lond.; Mr. E. N. Fallaize, Cambridge; Mrs. E. Francis, Crediton; Dr. Charles Fraser, Lond.; Dr. Paul C. Franze, Bad Nauheim; Mr. Fraser, Lond.; Mr. Fournet, Lond.; Mr. H. S. Fremlin, Lond.

G.—Dr. V. J. Glover, Waterloo; Messrs. Gale and Co., Lond.; Glasgow Eye Infirmary, Secretary of; Mr. Edward Goodby, Llandudno; Gardner - Baruda Chemical Co., Chicago; Great Northern Central Hospital, Medical Committee of, Hon. Secretary of; Dr. A. Gardner, Blackpool.

H.—Dr. A. R. Henchley, Canterbury; Messrs. Humbert and Flint, Lond.; H. St. A. A.; Dr. J. B. Hellier, Leeds.

J.—Dr. H. Lewis Jones, Bourton; Miss Jex-Blake, Menston; Dr. Evan Jones, Aberdare; J. S. H.; Miss Theodora Johnson, Bolton; Jaeger Central Warehouse, Lond.; Mr. W. Jones, Liverpool; Mrs. Florence James, Sandgate; Messrs. W. and A. K. Johnston, Edinburgh.

K.—Messrs. R. A. Knight and Co., Lond.; Mr. A. Brown Kelly, Glasgow; Mr. W. S. Kerr, Sheffield; Messrs. H. and T. Kirby and Co., Lond.; Messrs. Kirchhoff and Neirath, Berlin.

L.—Mr. H. K. Lewis, Lond.

M.—Mr. F. J. McAuliffe, Knock; Medical Graduates' College and Polyclinic, Lond., Secretary of; Mr. J. Murray, Lond.; Messrs. Macmillan and Co., Lond.; Macclesfield General Infirmary, Secretary of; Mildmay Nursing Home, Lond., Superintendent of; Messrs. Millikin and Lawley, Lond.; Mr. E. Moore, Lond.; M. D., London; Messrs. J. H. Maggs and Co., Eastbourne; Maltox Co., Lond., Secretary of; Mr. N. E. Methley, Clifton; Mrs. S. Malone, Lond.; Dr. P. W. MacDonald, Dorchester.

N.—North-East London Post-Graduate College; Neuron; Mr. H. Needes, Lond.; Mr. J. C. Needes, Lond.; North Staffordshire Infirmary, Stoke-upon-Trent.

O.—Messrs. Orridge and Co., Lond.

P.—Mr. Y. J. Pentland Edinburgh; Miss Parkington, Eastbourne; Messrs. C. Pool and Co., Lond.; Mr. E. Mountjoy Pearse, Bristol; Dr. E. P. Philpotts, Bournemouth; Principal; P. C. S.; Messrs. Peacock and Hadley, Lond.; Professor F. J. Pick, Prague.

R.—Messrs. Robertson and Scott, Edinburgh; Mr. R. Redpath, Newcastle-on-Tyne; Royal Albert Hospital, Devonport, Secretary of; *Reading Mercury*, Manager of; Royal Society, Lond., Clerk of the.

S.—Dr. D. Lloyd Smith, Bowden; Dr. Alfred W. Saunders, Pretoria; Dr. Sydney Stephenson, Lond.; Professor W. Stirling, Craigmore; Messrs. Spiers and Pond, Lond.; Stockport Infirmary, Secretary of; Mr. N. S. Sodhi, Edinburgh; Messrs. Silk and Terry, Birmingham; Seltzogene Patent Charges Co., St. Helens; Messrs. Sykes, Josephine, and Co., Lond.; Dr. E. C. Seaton, Lausanne; Salford Royal Hospital, Secretary of; Scholastic, Clerical, &c., Association, Lond.; Messrs. G. Street and Co., Lond.; Mr. A. Strauss-Collin, Wiesbaden; Mr. B. F. Smallman, Lond.; Messrs. Strowger and Son, Wigan.

T.—Dr. P. L. Townley, Gayndah, Queensland; T. W. T.

V.—Dr. A. Van der Veer, Albany, U.S.A.

W.—Dr. C. Whitman, Paris; Messrs F. Williams and Co. Lond.; Messrs. P. Walker and Son, Liverpool; Messrs. E. R. Walker and Son, Manchester; Mr. A. E. W. Wheatley, Lond.; Messrs. A. J. Wilson and Co., Lond.; West Surrey Central Dairy Co., Guildford, Manager of; Wills, Ltd., Lond.; Dr. O. C. Welbourn, Los Angeles, U.S.A.; Dr. D. Campbell Watt, Pietermaritzburg; Messrs. W. Wood and Co., New York; Messrs. H. Wilson and Son, Lond.; Messrs. Willing, Lond.; Messrs. Wookey and Son, Leixlip.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. S. Appleton, Lond.; A. G.; Dr. J. Adam, West Malling; Mr. F. C. Angear, Chatham; A. E. G.

B.—Mr. F. V. Bice, St. Austell; Mr. Bindley, Ross; Dr. E. T. Born, West Falkland Island; Dr. A. G. Brydon, Rangitikei, New Zealand; Dr. J. M. Bennion, Oxford; Dr. S. H. Bown, Lond.

C.—Mr. W. Clark, South Shields; Central London Throat and Ear Hospital, Secretary of; C. J.; Cheltine Foods, Ltd., Cheltenham, Secretary of; C. G. S. L.; C. H. O.

D.—Dr. J. Davidson, Liverpool; Mr. M. E. Dovaston, Hendon; Mr. Dawson, Knightwick; Mr. N. Davis, Lechlade; D. C.

E.—E. C. M.; E. T. T.

G.—G. M. S.; G. I. S.; G. H. C.; G. M.

H.—Mr. C. Holding, Ixworth; Mr. J. Heywood, Manchester; Dr. W. N. Head, Boscombe; Mr. T. W. Hughes, Abersoch; Mr. W. Hurst, Tadcaster; Mr. John Hart, Lond.; Headmaster, Sparsholt; Dr. W. H. Harvey, Toronto.

J.—Mr. E. O. Jones, Aberfair; Jeyes' Sanitary Compounds Co., Lond., Secretary of; J. M. C.; Dr. J. Jones, Clydach; J. C. H.; J. K. B.; J. G.

K.—Dr. H. Kenwood, Lond.; Mr. W. V. Kane, Sangor, India; Mr. H. M. Kennedy, Bexhill; Kny Surgical Co., Lond.

L.—Mr. C. H. Leaf, Lond.; Leeds Trained Nurses' Institution, Matron of; Mr. Lockwood, North Walsham; Messrs. Lee and Nightingale, Liverpool; L. J.; Dr. W. Liversedge, Skipton.

M.—Mr. R. F. Moorshead, Bristol; Dr. W. Murrell, Lond.; Dr. Arthur Marriott, Aldeburgh; Medical Officer, Raj Hathwa, India; Dr. A. Miller, Hatton; M. S. H.; M. C. S.; M. L. D.; Dr. G. Metcalfe, Spennymoor; Manchester Southern Hospital, Secretary of; Mr. Mathew, Ongar; Dr. Myra Mackenzie, Bucknall; M. S. M. D.; Messrs. C. Mitchell and Co., Lond.; Mr. C. T. B. Maisey, Witham; Mr. C. MacGown, Stockton-on-Tees.

N.—Mr. S. C. M. Nourse, Clacton-on-Sea.

O.—Mr. J. Morgan Owen, Fishguard; O. A.; Mr. C. A. P. Osburne, Norwich.

P.—Mr. H. J. Pearson, Lond.; P. E. J.; Rev. Canon Pelly, Great Malvern; Mr. T. Pearson, Tubbermore; Dr. G. N. Pitt, Lond.; Dr. A. Pryce, St. Asaph.

R.—R. M.; R. W.

S.—Mr. E. Smyth, Portaferry; Dr. T. Schott, Bad Nauheim; Mr. M. A. Sagoon, Bombay; Mr. B. C. Stevens, Lancaster; Mr. R. J. L. Sladen, Igatpuri, India; St. John Ambulance Association, Lond.; Smedley's Hydro, Matlock; Surgeon, Chetlaston; Dr. J. Shaw, Liverpool; Messrs. Savory and Moore, Lond.

T.—Mr. J. R. Tannahill, Greenock; T. G.; T. F. R.

W.—Mr. J. Williams, Bradford; Dr. E. A. Walker, New Plymouth, New Zealand; W. E. T.; W. A. R.; W. H.; "Wadenhoe," Bournemouth; W. P. K.; W. S.; W. B. R.

EVERY FRIDAY. **THE LANCET.** PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements	Ditto	0 4 6
	Every additional Line	0 0 6

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.
Terms for Position Pages and Serial Insertions on application.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to advertisements appearing in THE LANCET.

The Manager cannot hold himself responsible for the return of testimonials, &c., sent to the Office in reply to Advertisements; copies only should be forwarded.

Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 31, Rue Bapts, Asnières, Paris.